Gustau Camps-Valls

Full Professor
Image Processing Lab (IPL)
Universitat de València, Spain

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https://isp.uv.es

Personal Information

Date of birth	March 8th, 1972, València, Spain
Current position	Full Professor at Dep. Eng. Electrònica, Universitat de València
	Leader at Image Processing Lab (IPL), Universitat de València

Brief Vitae

Gustau Camps-Valls, https://www.uv.es/gcamps, earned a Ph.D. degree in Physics (2002, *summa cum laude*) from the Universitat de València, and is currently **Full Professor in Electrical Engineering** in the same university. **He is the Group Leader of the Image Processing Lab (IPL) group, https://isp.uv.es, an interdisciplinary group of 50+ researchers working at the intersection of AI and machine learning for Earth and Climate sciences.** His research interests involve developing novel AI and causality algorithms for better monitoring our planet from space, understanding the processes and extreme events, and achieving a sustainable Earth. He currently coordinates several European projects in these areas, and assists the aerospace industry (ESA, EUMETSAT, NASA) as consultant and member of Advisory Boards. He has been Visiting Researcher at the Remote Sensing Laboratory (Univ. Trento, Italy) in 2002, the Max Planck Institute (Tübingen, Germany) in 2009 and 2016, Invited Professor at the EPFL (Lausanne, Switzerland) in 2013, at MPI (Jena, Germany) in 2018, and is currently Visiting Chair Professor at the Institut Polytechnique de Paris (2026–2029) and Humboldt Researcher at the Max Planck Institute for Biogeochemistry, Jena (2026–2028).

Gustau is interested in **developing AI and causality methods to tackle relevant environmental and societal problems.** From detecting and forecasting extreme events (like droughts, heatwaves and floods), to improve Earth models with AI emulation and novel parameterizations, as well as explaining complex systems like the interconnected Earth with causality and equation discovery. **Get a visual feeling of his research in this ISP presentation video.**

Prof. Camps-Valls research activities have resulted so far in **350+ peer-reviewed international journal papers, 400+ international conference papers, 25+ chapters, and in editing 6 books on remote sensing, image processing and machine learning. He has an h-index of 109 in Google Scholar, with 55,000+ total citations, from which 32,000+ were received since 2021.** He was listed as a Clarivate Highly Cited Researcher in 2011, 2021, 2022, 2023, and 2024, and Thomson Reuters ScienceWatch identified his activities as Fast Moving Front research; the Essential Science Indicators identified him as the author of the most-cited paper in Engineering in 2011. **More than 7 papers received 1000+ citations each, and a paper about information fusion with kernels received the Google Classic Paper Award.** He has published seminal papers in Nature, Nature Communications, Nature Geoscience, Science Advances, and PNAS.

He is a referee and Program Committee member of many international journals and conferences. He was the Technical Program Chair at IEEE IGARSS 2018, València (2400+ attendees), and the General Chair of AISTATS 2022, València. Since 2007 he is member of the Data Fusion Technical Committee of the IEEE GRSS, and of the MLSP TC of IEEE SPS. He is (or has been) Associate Editor of "IEEE Trans. Sig. Proc.", "IEEE Sig. Proc. Lett.", "IEEE Geosc. Rem. Sens. Lett.", and Guest Editor of "IEEE Jour. Sel. Topics in Sig. Proc.". **He was member of the MTG-IRS Science Team (MIST) of EUMETSAT.** Prof. Camps-Valls is a habitual evaluator of project proposals for H2020 (ERC, FET), NSF, China Science Foundation, Swiss Science Foundation, etc.

Since 2019 he is an ELLIS Fellow and coordinates the 'Machine Learning for Earth and Climate Sciences' research program of ELLIS.eu and foundational node of the AI Doctoral Academy (i-AIDA). Prof. Camps-Valls was included in the prestigious IEEE Distinguished Lecturer program of the IEEE GRSS (2017–2019), and is deeply involved in the ITU AI4Good seminar series.

In 2018 he was elevated to IEEE Fellow (Geosciences and Signal Processing Societies). Since 2019 he is an Invited Professor Fellow of the ESA PhiLab; since 2021 acts as board member of the European Science Foundation advising ESA, EU and national space agencies. In 2022 he was elevated to Fellow of the European Academy of Sciences (EurASc),

the Academia Europaea (AE), and the Asia-Pacific Artificial Intelligence Association (AAIA). In 2025 he was elected Fellow of the American Geophysical Union (AGU), received the **Blaise Pascal Medal** of the European Academy of Sciences (Earth & Environmental Sciences), and was awarded the prestigious **Carl Zeiss – Alexander von Humboldt Research Award** (€100,000), which he holds at the Max Planck Institute for Biogeochemistry, Jena (with host Markus Reichstein, 2026–2028). **Prof. Camps-Valls has received two European Research Council (ERC) grants: an ERC Consolidator grant on "Statistical learning for Earth observation data analysis" (2015) and an ERC Synergy grant on "Understanding and Modelling the Earth system with machine learning" (2019).**

Research Vision and Impact

Future Vision: The transparent AI climate system. My main goal is to push current technology forward into fully transparent, physics-based, and causal AI models. By creating a 'digital twin' of climate and socio-economic risks, I plan to provide actionable early warning systems to support global efforts in mitigation and adaptation over the next century. I am deeply committed to leading interdisciplinary efforts at the interplay of Earth and Computer Sciences, pioneering physics-aware and causal AI paradigms to address critical sustainability challenges. Alongside my team, I am revolutionizing Earth monitoring through AI algorithms that sharpen the detection and forecasting of extreme phenomena—including droughts, heatwaves, wildfires and floods—while rigorously assessing their multifaceted impacts on health, the environment, and socioeconomic systems. My work bridges science, industry, and society—transferring solutions to leading institutions in Earth observation (ESA, EUMETSAT), geosciences (EGU, AGU), tech (Google, Microsoft), and humanitarian sectors (UN/WFP, FAO, iDMC). I also contribute to AI education through European excellence networks (ELLIS, CAIRNE) and international doctoral programs (i-AIDA, Marie Curie).

Climate Intelligence Across Earth Systems. My research develops pioneering AI-driven tools to estimate and forecast critical climate variables across the Earth system spheres: **Biosphere:** I map carbon sinks, vegetation traits, crop yields, forest disturbances, and soil properties from space, delivering AI solutions to organizations like ESA to quantify land–atmosphere interactions and enhance climate resilience. **Atmosphere:** In collaboration with AEMET and EUMETSAT, I deploy cutting-edge AI to retrieve atmospheric profiles and aerosol properties, sharpening the modeling of interactions and climate impact predictions. **Hydrosphere:** My research develops AI models to monitor aquatic ecosystems, providing foundational insights into sea-level rise and how water bodies respond to our changing climate. **Anthroposphere:** I advance physics-aware AI and causality to model climate-driven displacement and food crises, providing early-warning systems for UN/WFP and iDMC that guide aid for millions.

Interdisciplinary approach. I deeply believe in interdisciplinary approaches that combine and transfer knowledge across disciplines, international collaboration, and serendipitous discoveries. My work combines machine learning and Earth sciences, focusing on AI algorithms that not only excel at prediction but also enhance our understanding of the Earth system. I advocate for hybrid and physics-aware ML (encoding knowledge in machines) as well as explainability, interpretability, causal inference, and equation discovery (decoding knowledge from machines). My synergistic approach to geoscience with AI aims to build a resilient, trustworthy view of our changing climate, contributing to modeling the complex Earth system, monitoring extreme events, identifying causes, and communicating risks.

Scientific Impact. My contributions have impacted remote sensing, image processing, machine learning, and the geosciences (recognized by the IEEE Landgrebe Award, Blaise Pascal Medal, and Humboldt Research Award). They also extend to AI and causal inference, with five papers in Nature journals on both topics. My work appears in top-tier journals such as Nature, Science Advances, PNAS, Nature Communications, and Nature Geoscience, as well as IEEE SPM, TPAMI, TNNLS, and JMLR. I have achieved a high level of scientific impact (h=110+), and have attracted interdisciplinary talent building a diverse team across backgrounds, nationalities, ages, and genders.

Technological and Socioeconomic Impact. My work goes beyond research in AI and geoscience. Algorithms improve atmospheric chemistry and weather forecasting (EUMETSAT MTG-IRS); my team deploys cloud detection and land classification onboard satellites (ESA); the carbon community uses AI to estimate carbon, water, and energy fluxes (FLUXCOM); our algorithms detect land-surface changes and forecast crop yields (JRC, FAO), enabling high-resolution monitoring globally (HISTARFM, an official Google product); and humanitarian organizations benefit from our causal AI models for food insecurity in Africa (UN/WFP, FAO) and human migration (iDMC).

Degrees / Education

PhD Physics	Universitat de València, September 2002 (*summa cum laude*)
MSc Physics	Universitat de València, June 2000

BSc Electrical Engineering	Universitat de València, July 1998
BSc Physics	Universitat de València, July 1996

Languages

Catalan	Mother tongue
Spanish	Native speaker
English	Equivalent to native speaker (C2)
Italian	Basic knowledge (B2)
French	Basic knowledge (B1)

Professional Experience

Academic positions

01.2026–	Visiting Chair Professor. Institut Polytechnique de Paris, France (HI-Paris program, 2026–2029)
01.2026–	Humboldt Researcher. Max Planck Institute for Biogeochemistry, Jena, Germany (2026–2028)
10.2017–	Full Professor (Catedrático), Universitat de València
10.2008–	Head of Image Processing Lab (IPL), https://isp.uv.es
10.2007–10.2017	Associate Professor. Electrical Eng. Dept., Universitat de València
10.2002–09.2007	Tenure Track – Postdoc. Assistant Professor, Universitat de València
10.1998–09.2002	Assistant Professor, Universitat de València
10.2009–10.2018	PhD Program Coordinator. Electrical Eng. Dept., https://die.uv.es

Visiting Researcher / Invited Professor

05.2018–07.2018	Invited Professor. Max Planck Institute for Biogeochemistry, Jena, Germany
05.2016–10.2016	Invited Professor. Max Planck Institute Intelligent Systems, Tübingen, Germany
05.2013–07.2013	Invited Professor. École Polytechnique Fédérale de Lausanne, Switzerland
05.2009–10.2009	Invited Professor. Max Planck Institute Intelligent Systems, Tübingen, Germany
05.2004–10.2004	Visiting Researcher. Università degli Studi di Trento, Italy
05.2001–11.2001	Visiting Researcher. Universidad Carlos III de Madrid, Spain

Selected Research Funding (∼12M€ as PI)

09/15–08/20	SEDAL: Statistical Learning for Earth Observation Data Analysis. ERC Consolidator Grant (ERC-CoG). 1.72M€
06/17–06/20	CLOUDSAT: Cloud Screening of Satellite Images. MINECO. 272K€
06/15–06/19	Next Generation Kernel-Based ML for Big Missing Data in Earth Observation. Norwegian Research Council. 946K€
09/20–08/24	ELISE: European Learning and Intelligent Systems Excellence. ICT-48. 12M€, UV: 230K€
01/21–12/23	DeepCube: Explainable AI pipelines for big Copernicus data. EU H2020. 4M€, UV: 450K€
01/20–12/24	iMIRACLI: innovative ML to constrain Aerosol-cloud CLimate Impacts. ETN Marie Curie. 2M€, UV: 250K€
06/20–06/23	SCALE: Causal inference in the human-biosphere coupled system. Fundación BBVA. 68K€
05/22–05/24	Causal4Africa: Causal AI for Food Security in Africa. Microsoft Research – Climate Research Initiative. G. Camps-Valls (PI), G. Varando (Co-PI).
09/21–10/25	XAIDA: Extreme AI for Detection and Attribution. EU H2020. 4M€, UV: 350K€
01/21–12/23	DeepExtremes: Multi-Hazards, Compounds and Cascade Events. ESA AI for Science. 400K€, UV: 90K€
01/21–12/23	OpenSR: Robust, accountable super-resolution for Sentinel-2. ESA. 1M€, UV: 300K€
09/20–08/26	USMILE: Understanding and Modeling the Earth System with ML. ERC Synergy Grant (ERC-SyG). PI (with V. Eyring, M. Reichstein, P. Gentine). 9.89M€, UV: 2.3M€
01/22–12/25	AI for Complex Systems: Brain, Earth, Climate, Society. Generalitat Valenciana – PROMETEO. 600K€

01/22–12/25	HERMES: Hybrid Estimation and Remote Sensing Monitoring of Evaporation and Soil Moisture. BELSPO Stereo IV. 280K€
09/23–08/26	ELIAS: European Lighthouse of AI for Sustainability. HORIZON-RIA. 13M€, UV: 350K€
01/24–01/27	THINKINGEARTH: Copernicus Foundation Models for a Thinking Earth. HORIZON-RIA. 6M€, UV: 450K€
04/24–04/27	AI4PEX: AI for Enhanced Representation of Processes and Extremes in Earth System Models. HORIZON-RIA. 8M€, UV: 550K€
09/24–03/27	MediTwin: Mediterranean Digital Twin for Understanding Climate Extremes. HORIZON-RIA. 2M€, UV: 300K€
07/25–08/28	ELLIOT: European Large Open Multimodal Foundation Models. HORIZON CL4-2024-HUMAN-03. PI: G. Camps-Valls. 25M€, UV: 1M€
06/26–05/30	EarthGenerator: AI Foundation Models for Earth Science (GenAI4EU). HORIZON-CL4-INDUSTRY-2025-01-DIGITAL-61 (RIA). PI: G. Camps-Valls. UV: 700K€

Technology Transfer

- Delivering advanced AI methods and tools to ESA, EUMETSAT and NASA as preparation for future satellite missions. See https://isp.uv.es/software.html for software releases.
- Computational improvements in classification methods included in official ESA products (BEAM – ENVISAT-MERIS and AATSR Toolbox).
- Coordinator of the ELLIS research program 'Machine Learning for Earth and Climate Sciences'.
- Consultant on data science for the venture capital 'Synóptikos'.
- Advisory committee and consultant of ESA PhiLab on 'AI4Earth'.
- Patent: "Method, apparatus and software for color image compression based on non-linear perceptual representations and machine learning". J. Malo, J. Gutiérrez, G. Camps-Valls, M.J. Luque. Ref. P200801943, 2008.

Organizing Committees and Conference Service

Program comm.	IGARSS, IWANN, SPIE RSS, IEEE MLSP, MULTITEMP, ICANN, ICPRAM, ICML, NeurIPS, ICLR, AISTATS, UAI, ...
Area Chair	NeurIPS, AISTATS
Session Chair	IEEE IGARSS, IEEE ICIP, IEEE MLSP, EGU, AGU
Keynote Speaker	50+; see isp.uv.es/talks.html
Technical Chair	IEEE IGARSS 2018, València (2400+ attendees)
General Chair	IEEE MLSP 2012, Santander; AISTATS 2022, València

Editorial Activities

Book ed.	"Deep Learning for the Earth Sciences" (Wiley & Sons, 2021)
Book ed.	"Digital Signal Processing with Kernel Methods" (Wiley & Sons, 2018)
Book ed.	"Remote Sensing Image Processing" (Morgan & Claypool, 2011)
Book ed.	"Kernel Methods for Remote Sensing Data Analysis" (Wiley & Sons, 2009)
Book ed.	"Kernel Methods in Bioengineering, Signal and Image Processing" (IGI, 2007)
Associate Editor	"IEEE Transactions on Signal Processing"
Associate Editor	"IEEE Signal Processing Letters"
Associate Editor	"IEEE Geoscience and Remote Sensing Letters"
Guest Editor	"IEEE Journal of Selected Topics in Signal Processing"
Guest Editor	"IEEE Geoscience and Remote Sensing Magazine"
Guest Editor	"Sensing and Imaging" (Springer)

Memberships

Fellow	American Geophysical Union (AGU) (2025–)
Fellow	Academia Europaea (AE) (2022–)
Fellow	European Academy of Sciences (EurASc) (2022–)

Fellow	Asia-Pacific Artificial Intelligence Association (AAIA) (2021–)
Advisor	European Science Foundation (ESF) – Earth/Space branch (2021–)
Fellow	ELLIS (2019–)
Advisor	European Space Agency (ESA) – Φ-Lab (2019–)
Fellow	IEEE, in both Geosciences and Signal Processing Societies (2018–)
Member	American Geophysical Union (AGU) (2017–)
Member	European Geosciences Union (EGU) (2016–)
Member	International Society for Optical Engineers (SPIE) (2018–)
Member	Association for Computing Machinery (ACM) (2021–)
Member	Data Fusion Technical Committee of the IEEE GRSS (2009–)
Member	MLSP Technical Committee of the IEEE-SPS (2009–2014)

Reviewer Activities

Conferences	MLSP, EUSIPCO, ICASSP, IGARSS, SPIE, ICML, NeurIPS, ICLR, AISTATS, UAI, ECML, ...
Journals	IEEE TGRS, IEEE GRSL, IEEE GRSM, IEEE TSP, IEEE SPL, IEEE TIP, IEEE TPAMI, JMLR, Nature, Nature Comm., Nature Geosci., Nature Clim. Change, Sci. Adv., PNAS, RSE, ...
Book proposals	IGI Inc., Springer-Verlag, IOS Press, Wiley & Sons
Projects	SNSF, Belgian Science Foundation, ESA, NSF, ERC StG/CoG/SyG, H2020 SPACE, H2020 FET, H2020 Marie Curie, Max Planck Society, ...
Advisory boards	EUMETSAT MTG-IRS Mission Advisory Group (2010–), ESA PhiLab 'AI4Earth', Evaluation panels in France, Switzerland, Netherlands, Germany

Awards & Recognitions

2025	Carl Zeiss – Alexander von Humboldt Research Award (€100,000)
2025	Blaise Pascal Medal, European Academy of Sciences (Earth & Environmental Sciences)
2025	Fellow of the American Geophysical Union (AGU)
2024	IEEE GRSS David Landgrebe Award
2024	Clarivate Highly Cited Researcher (Geosciences)
2023	Clarivate Highly Cited Researcher (Geosciences)
2023	Top 2% World Cited Researchers 2020–2023 (Stanford University Ranking)
2023	18 InCites "Highly Cited Papers" + 5 "Research Front Papers"
2022	ESA-EGU Excellence Award for Research Groups in Europe (Finalist)
2022	Fellow Member of Academia Europaea
2022	Fellow Member of European Academy of Sciences (EurASc)
2022	Clarivate Highly Cited Researcher (Geosciences)
2021	Fellow Member of Asia-Pacific Artificial Intelligence Association (AAIA)
2021	Clarivate Highly Cited Researcher (Geosciences)
2021	Member of the European Space Sciences Committee – European Science Foundation
2020	ERC Synergy Grant (ERC-SyG) 2020 (10M€, with V. Eyring, M. Reichstein, P. Gentine)
2019	ELLIS Fellow Member
2019	ESA Φ-Lab Fellow Advisor
2018	Elevation to "IEEE Fellow" (GRSS and SPS chapters)
2017	Best Paper Award, IEEE IGARSS 2018 on causal inference with kernels
2017	Elevation to "IEEE Distinguished Lecturer" (GRSS chapter)
2017	Google Classic Paper Award in Engineering and Computer Science / Remote Sensing
2015	Winner of the IEEE GRSS Data Fusion Contest
2015	ERC Consolidator Grant (ERC-CoG) 2015 (€1.72M)
2014	Best Paper Award, IEEE Whispers 2014
2013	Best Paper Award, IEEE Geoscience and Remote Sensing Society 2013
2012	Best Paper Award, IEEE IGARSS 2012 Student Prize Paper (Munich, Germany)
2011	Best Paper Award, IEEE Geoscience and Remote Sensing Society 2011
2011	Thomson Reuters Highly Cited Researcher
2011	Thomson Reuters ScienceWatch: Fast Moving Front research
2011	Thomson Reuters Essential Science Indicators: most-cited paper in Engineering in 2011
2009	Best Paper Award, IEEE MLSP (Grenoble, France)

Science Dissemination

Outreach Writing

Medium.com gcampsvalls – regular science outreach blog (2023–present)

"From Code to Carbon: 30 years in academia" (February 2026)

"Deconstructing the Science System" (October 2025)

The Conversation Profile; "La inteligencia artificial es solo artificial"

Keynote Lectures and Invited Courses (selected)

2025 ESA–NASA International Workshop on AI Foundation Models for Earth Observation, ESRIN, Italy (850+ participants)

2024 DeepLearn 2024 International School on Deep Learning – course: "AI for Earth, Climate, and Sustainability"

2023– 40th IAHR World Congress (Vienna) – keynote: "Machine learning for Earth and Climate Sciences"

2019– ITU AI4Good seminar series – speaker and convener; profile

2017–2019 IEEE GRSS Distinguished Lecturer; 50+ keynote talks – isp.uv.es/talks

Video Lectures (public)

YouTube Cambridge ELLIS Seminar – Advanced ML for Earth sciences

YouTube IEEE GRSS Virtual Seminar (2021): ML for Modelling and Understanding in Earth Sciences

Vimeo ISP Group research overview video

Media Coverage

2025 Humboldt Award – UV press release, Valencia Plaza, El Periòdic (Valencian press)

2025 Blaise Pascal Medal – PCUV news; lecture at EurASc Symposium, CERN, Geneva (Dec 2025)

2024 IEEE GRSS David Landgrebe Award – UV press release

2023 ISP finalist for ESA–EGU Excellence Award for novel AI methods in Earth observation

EurekaAlert: Using AI to better understand and model the Earth system

Phys.org: AI and big data provide the first global maps on key vegetation traits

Techxplore: Machine learning revolutionizes methods to quantify terrestrial vegetation

10 Most Cited Papers – 7 with 1000+ Citations

1. *"Deep learning and process understanding for data-driven Earth System Science".* M. Reichstein, G. Camps-Valls, B. Stevens, J. Denzler, N. Carvalhais, M. Jung, Prabhat. Nature 566:195–204, 2019. *JIF=42, >5938 citations.*
2. *"Hyperspectral remote sensing data analysis and future challenges."* J.M. Bioucas-Dias, A. Plaza, G. Camps-Valls, P. Scheunders, N. Nasrabadi, et al. IEEE Geoscience and Remote Sensing Magazine 1(2):6–36, 2013. *>2510 citations.*
3. *"Recent advances in techniques for hyperspectral image processing."* A. Plaza, J.A. Benediktsson, J.W. Boardman, G. Camps-Valls, et al. Remote Sensing of Environment 113:S110–S122, 2009. *>2073 citations.*
4. *"Kernel-based methods for hyperspectral image classification."* G. Camps-Valls and L. Bruzzone. IEEE Trans. Geosc. Rem. Sen 43(6):1351–1362, 2005. *>1796 citations.* Identified by Thomson Reuters ScienceWatch as Fast Moving Front research.
5. *"Composite kernels for hyperspectral image classification."* G. Camps-Valls, L. Gomez-Chova, J. Muñoz-Marí, J. Vila-Francés, J. Calpe-Maravilla. IEEE Geosc. Rem. Sens. Lett. 3(1):93–97, 2006. *>1299 citations.*
6. *"Inferring causation from time series with perspectives in Earth system sciences."* J. Runge, S. Bathiany, E. Bollt, G. Camps-Valls, et al. Nature Communications 10(2553):1–13, 2019. *JIF=14, >1217 citations.*
7. *"Global and time-resolved monitoring of crop photosynthesis with chlorophyll fluorescence."* L. Guanter, Y. Zhang, M. Jung, J. Joiner, G. Camps-Valls, et al. PNAS 111(14):E1327–E1333, 2014. *>1212 citations.*
8. *"Optical remote sensing and the retrieval of terrestrial vegetation bio-geophysical properties – a review."* J. Verrelst, G. Camps-Valls, J. Muñoz-Marí, J.P. Rivera, F. Veroustraete, J.G.P.W. Clevers, J. Moreno. ISPRS J. Photogramm. Remote Sens 108:273–290, 2015. *>933 citations.*
9. *"Advances in hyperspectral image classification: Earth monitoring with statistical learning methods."* G. Camps-Valls, D. Tuia, L. Bruzzone, J.A. Benediktsson. IEEE Signal Processing Magazine 31(1):45–54, 2013. *>894 citations.*
10. *"Unsupervised deep feature extraction for remote sensing image classification."* A. Romero, C. Gatta, G. Camps-Valls. IEEE Trans. Geosc. Rem. Sens. 54(3):1398–1410, 2015. *>885 citations.*

10 Top Impact Factor Journal Papers

1. *"Deep learning and process understanding for data-driven Earth System Science."* M. Reichstein, G. Camps-Valls, B. Stevens, J. Denzler, N. Carvalhais, M. Jung, Prabhat. Nature 566:195–204, 2019. *JIF=42, >5938 citations.*
2. *"Compensatory water effects link yearly global land CO_2 sink changes to temperature."* M. Jung, M. Reichstein, C.R. Schwalm, G. Camps-Valls, et al. Nature 541(7638):516–520, 2017. *JIF=42.*
3. *"Causal inference for time series."* J. Runge, A. Gerhardus, G. Varando, V. Eyring, G. Camps-Valls. Nature Reviews Earth & En 4:605–623, 2023. *JIF=37.*
4. *"Discovering causal relations and equations from data."* G. Camps-Valls, A. Gerhardus, U. Ninad, G. Varando, G. Martius, E. Balaguer-Ballester, R. Vinuesa, E. Diaz, L. Zanna, J. Runge. Physics Reports 1044:1–68, 2023. *JIF=30.*
5. *"Serendipity's role in advancing geoscience."* G. Camps-Valls. Nature Geoscience 2025. *JIF=18.*
6. *"Artificial intelligence for modeling and understanding extreme weather and climate events."* G. Camps-Valls, M.Á. Fernández-Torres, K.H. Cohrs, A. Höhl, A. Castelletti, et al. Nature Communications 16:1919, 2025. *JIF=14.*
7. *"Leveraging remote sensing and crowd-sourced biodiversity data for enhanced plant functional trait mapping."* Á. Moreno-Martínez, J. Muñoz-Marí, J. Adsuara, B. Dechant, J. Kattge, T. Kattenborn, G. Camps-Valls, et al. Nature Communications 2026. *JIF=14.*
8. *"Exploring interactions between societal context and natural hazards on human population displacement."* M. Ronco, J.M. Tárraga, J. Muñoz-Marí, M. Piles, G. Camps-Valls, et al. Nature Communications 2023. *JIF=14.*
9. *"A Unified Vegetation Index for Quantifying the Terrestrial Biosphere."* G. Camps-Valls, M. Campos-Taberner, Á. Moreno-Martínez, S. Walther, G. Duveiller, A. Cescatti, M. Mahecha, J. Muñoz-Marí, F.J. García-Haro, L. Guanter, J. Gamon, M. Jung, M. Reichstein, S.W. Running. Science Advances 7(9):eabc7447, 2021. *JIF=14, >760 citations.*
10. *"Accelerated north–east shift of the global green wave trajectory."* M.D. Mahecha, G. Kraemer, M. Reinhardt, D. Montero, F. Gans, A. Bastos, G. Camps-Valls, et al. PNAS 123(9):e2515835123, 2026. *JIF=12.*

Main Collaborators

Through the years I collaborated with 100+ researchers across a wide variety of fields, from remote sensing and geosciences to atmospheric sciences, ecology, climate science, mathematics, and computer science.

- Markus Reichstein, MPI Biogeochemistry, Jena, Germany
- Veronika Eyring, DLR, Munich, Germany
- Pierre Gentine, Columbia University, USA
- Miguel Mahecha, Universität Leipzig, Germany
- Jakob Runge, DLR, Germany
- Devis Tuia, EPFL, Switzerland
- Lorenzo Bruzzone, Università degli Studi di Trento, Italy
- Diego Miralles, Ghent University, Belgium
- Ioannis Papoutsis, National Observatory of Athens, Greece
- Jonas Peters, ETH Zürich, Switzerland
- Bernhard Schölkopf, MPI Tübingen, Germany
- Dino Sejdinovic, University of Adelaide, Australia
- Robert Jenssen, University of Tromsø, Norway
- Steve Running, NTSG, University of Montana, USA
- Jose L. Rojo-Álvarez, Universidad Rey Juan Carlos, Madrid, Spain
- Manel Martínez-Ramón, University of New Mexico, USA
- Philip Stier, University of Oxford, UK
- Johannes Quaas, Universität Leipzig, Germany
- Nuno Carvalhais, MPI Biogeochemistry, Jena, Germany

Full collaborator list: https://isp.uv.es/collaborators.html.

Research Group – Image Processing Lab (IPL)

Group composition (May 2026):

- **55+ researchers** – 3 full professors, 7 associate professors, 5 assistant professors, 1 senior researcher, 10 postdocs,

25+ PhD students (see isp.uv.es/people)

- 20 completed PhD theses supervised (2008–2026); alumni hold permanent positions at EPFL, Universität Leipzig, ETH Zürich, DTU Copenhagen, BOKU Vienna, NYU, and University of Bristol

Funding and output:

- **40M€+** total EU/national portfolio (2015–2030); 12M€+ at Universitat de València; 2 ERC grants (CoG + SyG), 7 active Horizon-RIA projects
- 350+ peer-reviewed journal papers; 400+ conference contributions; 15+ open-source software packages (isp.uv.es/software)
- 140+ invited talks; ELLIS coordinator 'ML for Earth and Climate Sciences'; foundational node of i-AIDA

Network:

- Area chair NeurIPS, AISTATS; organizer AISTATS 2022, IEEE IGARSS 2018; member of 3 IEEE Technical Committees
- International co-supervision: MPI Jena, Universität Leipzig, NOA Athens, University of Oxford, University of Leipzig, Max Planck Society

Journal Papers

[1] G. Ascenso, M. Giuliani, J. Pérez-Aracil, S. Salcedo-Sanz, C. Bertini, P. Bonetti, G. Camps-Valls, M.- Fernández-Torres, A. Ficchì, N. Linscheid, M. Merlo, G. Palcic, M. Reichstein, M. Restelli, A. Toreti, E. Walt, and A. Castelletti. "The Maturation of AI in Drought Science: A Review of Trends, Pitfalls, and Priorities". In: *Water Resources Research* (2026).

[2] G. Camps-Valls. "AI needs a new philosophy of science". In: *The Innovation* (2026), p. 101311. ISSN: 2666-6758. DOI: https://doi.org/10.1016/j.xinn.2026.101311. URL: https://www.sciencedirect.com/science/article/pii/S2666675826000585.

[3] G. Giannarakis, V. Sitokonstantinou, D. Bormpoudakis, I. Tsoumas, N. Samarinas, G. Camps-Valls, and C. Kontoes. "Winter wheat improves soil carbon sequestration with reduced gains in warmer climates". In: *Environmental Research Letters* (2026). URL: http://iopscience.iop.org/article/10.1088/1748-9326/ae3785.

[4] D. Hong, C. Li, X. Li, G. Camps-Valls, and J. Chanussot. "Foundation Models in Remote Sensing: Evolving from Unimodality to Multimodality". In: *IEEE Geoscience and Remote Sensing Magazine* 14.1 (2026), pp. 1–20. DOI: 10.1109/MGRS.2026.3669086.

[5] E. Izquierdo-Verdiguier, A. González-Ramírez, Á. Moreno-Martínez, J. Muñoz-Marí, N. Clinton, F. Vuolo, and G. Camps-Valls. "Feasibility and Validation of the HISTARFM Gap Filling Algorithm for Sentinel-2 Data". In: *IEEE Geoscience and Remote Sensing Letters* XX.XX (2026), pp. 1–5. DOI: 10.1109/LGRS.2026.XXXXXXX.

[6] C. Ma, O. J. Pellicer-Valero, K.-H. Cohrs, J. Yao, J. Jiang, H. Li, and G. Camps-Valls. "Unveiling Spectral Attention Redundancy with Explainable AI". In: *IEEE Geoscience and Remote Sensing Letters* (2026), pp. 1–1. DOI: 10.1109/LGRS.2026.3654396.

[7] M. D. Mahecha, G. Kraemer, M. Reinhardt, D. Montero, F. Gans, A. Bastos, H. Feilhauer, I. Flik, C. Ji, T. Kattenborn, M. Migliavacca, M. Mönks, J. Quaas, S. Sippel, S. Walther, S. Wieneke, C. Wirth, and G. Camps-Valls. "Accelerated north–east shift of the global green wave trajectory". In: *Proceedings of the National Academy of Sciences* 123.9 (2026), e2515835123. DOI: 10.1073/pnas.2515835123. URL: https://www.pnas.org/doi/abs/10.1073/pnas.2515835123.

[8] Á. Moreno Martínez, J. Muñoz-Marí, J. Adsuara, B. Dechant, J. Kattge, T. Kattenborn, F. Sabatini, F. D. Schneider, G. Duveiller, P. Bodegom, E. Butler, M. Mahecha, E. Izquierdo-Verdiguier, J. Peñuelas, G. Boenisch, R. Pavlick, P. Townsend, N. Carvalhais, D. Lusk, and G. Camps-Valls. "Leveraging Remote Sensing and Crowd-Sourced Biodiversity Data for Enhanced Plant Functional Trait Mapping". In: *Nature Communications* (2026).

[9] P. Pfleiderer, A. Merrifield, I. Dunkl, H. Durand, E. Cariou, J. Cattiaux, G. Camps-Valls, and S. Sippel. "Considerable yet contrasting regional imprint of circulation change on summer temperature trends across the Northern hemisphere mid-latitudes". In: *Weather and Climate Dynamics* 7.1 (2026), pp. 89–108.

[10] Y. Song, F. Biljecki, G. Camps-Valls, and P. M. Atkinson. "GeoAI: Beyond mapping earth and cities through explainability, adaptability, and sustainability". In: *iScience* 29.1 (2026).

[11] J. Vicent, A. Kokhanovsky, G. Varando, L. Martino, and G. Camps-Valls. "Symbolic Regression for Physics-aware Emulation". In: *IEEE Transactions on Geoscience and Remote Sensing* (2026). DOI: 10.1109/TGRS.2026.3676858.

[12] T. Williams, H. Durand, G. Camps-Valls, T. Braun, F. Martinuzzi, D. Montero, and M. D. Mahecha. "Kernel Detrended Fluctuation Analysis for Estimating Multivariate Nonlinear Persistence". In: *Chaos: An Interdisciplinary Journal of Nonlinear Science* (2026). DOI: 10.1063/CH.2026.XXXXX.

[13] R. C. Wills, C. Deser, K. A. McKinnon, A. Phillips, S. Po-Chedley, S. Sippel, A. L. Merrifield, C. Bône, C. Bonfils, G. Camps-Valls, et al. "Forced Component Estimation Statistical Method Intercomparison Project (ForceSMIP)". In: *Journal of Climate* (2026), e250326.

[14] S. Zhao, I. Prapas, Z. Xiong, I. Karasante, I. Papoutsis, G. Camps-Valls, and X. X. Zhu. "Causal Graph Neural Networks for Robust Wildfire Forecasting Across Geographic Shifts". In: *ISPRS Journal of Photogrammetry and Remote Sensing* (May 2026). DOI: 10.2139/ssrn.5312486. URL: https://ssrn.com/abstract=5312486.

[15] G. Camps-Valls. "Serendipity's role in advancing geoscience". In: *Nature Geoscience* 18 (2025). Comment; published 22Jul2025. DOI: 10.1038/s41561-025-01748-7. URL: https://doi.org/10.1038/s41561-025-01748-7.

[16] G. Camps-Valls, M.-Á. Fernández-Torres, K.-H. Cohrs, A. Höhl, A. Castelletti, A. Pacal, C. Robin, F. Martinuzzi, I. Papoutsis, I. Prapas, J. Pérez-Aracil, K. Weigel, M. Gonzalez-Calabuig, M. Reichstein, M. Rabel, M. Giuliani, M. Mahecha, O.-I. Popescu, O. J. Pellicer-Valero, S. Ouala, S. Salcedo-Sanz, S. Sippel, S. Kondylatos, T. Happé, and T. Williams. "Artificial Intelligence for Modeling and Understanding Extreme Weather and Climate Events". In: *Nature Communications* 16.1919 (2025), pp. 1–10. DOI: https://doi.org/10.1038/s41467-025-56573-8.

[17] H. Durand, G. Varando, and G. Camps-Valls. "Learning Causal Response Representations through Direct Effect Analysis". In: *arXiv preprint arXiv:2503.04358* (2025).

[18] B. Fan, H. K. Zhang, Z. B. Li, J. Xiao, X. Che, Z. Liu, G. Camps-Valls, and J. M. Chen. "Estimating carbon fluxes over North America using a physics-constrained deep learning model". In: *ISPRS Journal of Photogrammetry and Remote Sensing* 227 (2025), pp. 551–569.

[19] P. Ghamisi, W. Yu, X. Zhang, A. Rizaldy, J. Wang, C. Zhou, R. Gloaguen, and G. Camps-Valls. "Geospatial Foundation Models to Enable Progress on Sustainable Development Goals". In: *arXiv preprint arXiv:2505.24528* (2025).

[20] M. Gonzalez-Calabuig, M.- Fernández-Torres, and G. Camps-Valls. "Generative networks for spatio-temporal gap filling of Sentinel-2 reflectances". In: *ISPRS Journal of Photogrammetry and Remote Sensing* 220 (2025), pp. 637–648. ISSN: 0924-2716. DOI: https://doi.org/10.1016/j.isprsjprs.2025.01.016. URL: https://www.sciencedirect.com/science/article/pii/S0924271625000152.

[21] J. Gonzalez, S. Dipu, G. Jimenez, G. Camps-Valls, and J. Quaas. "Machine Learning-Based Retrieval of Cloud Droplet Number Concentration and Liquid Water Path From Satellite Spectral Data". In: *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing* 18 (2025), pp. 21910–21922. DOI: 10.1109/JSTARS.2025.3601981.

[22] J. Gonzalez, S. Dipu, O. Sourdeval, A. Siméon, G. Camps-Valls, and J. Quaas. "Emulation of Forward Modeled Top-of-Atmosphere MODIS-Based Spectral Channels Using Machine Learning". In: *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing* 18 (2025), pp. 1896–1911. DOI: 10.1109/JSTARS.2024.3507692.

[23] C. Ji, T. Fincke, V. Benson, G. Camps-Valls, M.-Á. Fernández-Torres, F. Gans, G. Kraemer, F. Martinuzzi, D. Montero, K. Mora, et al. "DeepExtremeCubes: Earth system spatio-temporal data for assessing compound heatwave and drought impacts". In: *Scientific Data* 12.1 (2025), p. 149. DOI: https://doi.org/10.1038/s41597-025-04447-5.

[24] K. Klemmer, E. Rolf, M. Russwurm, G. Camps-Valls, M. Czerkawski, S. Ermon, A. Francis, N. Jacobs, H. R. Kerner, L. Mackey, et al. "Earth Embeddings: Towards AI-centric Representations of our Planet". In: (2025).

[25] S. Kondylatos, N. I. Bountos, D. Michail, X. X. Zhu, G. Camps-Valls, and I. Papoutsis. "On the Generalization of Representation Uncertainty in Earth Observation". In: *arXiv preprint arXiv:2503.07082* (2025).

[26] S. Kondylatos, N. I. Bountos, I. Prapas, A. Zavras, G. Camps-Valls, and I. Papoutsis. "Probabilistic machine learning for noisy labels in Earth observation". In: *Scientific Reports* 15.1 (2025), p. 35890.

[27] S. Kondylatos, N. I. Bountos, I. Prapas, A. Zavras, G. Camps-Valls, and I. Papoutsis. "Probabilistic machine learning for noisy labels in Earth observation". In: *Scientific Reports* 15.1 (Oct. 2025), p. 35890. ISSN: 2045-2322. DOI: 10.1038/s41598-025-19781-2. URL: https://doi.org/10.1038/s41598-025-19781-2.

[28] V. Laparra, J. E. Johnson, G. Camps-Valls, R. Santos-Rodríguez, and J. Malo. "Estimating Information Theoretic Measures via Multidimensional Gaussianization". In: *IEEE Transactions on Pattern Analysis and Machine Intelligence* (2025). DOI: https://doi.org/10.1109/TPAMI.2024.3495827.

[29] C. Li, D. Hong, B. Zhang, Y. Li, G. Camps-Valls, X. X. Zhu, and J. Chanussot. "Urbansam: Learning invariance-inspired adapters for segment anything models in urban construction". In: *arXiv preprint arXiv:2502.15199* (2025).

[30] J. Li, Y. Wang, Q. Sheng, Z. Wu, B. Wang, X. Ling, X. Liu, Y. Du, F. Gao, G. Camps-Valls, and M. Molinier. "CloudRuler: Rule-based transformer for cloud removal in Landsat images". In: *Remote Sensing of Environment* 328 (2025), p. 114913. ISSN: 0034-4257. DOI: https://doi.org/10.1016/j.rse.2025.114913. URL: https://www.sciencedirect.com/science/article/pii/S0034425725003177.

[31] J. Li, Y. Wang, Q. Sheng, Z. Wu, B. Wang, X. Ling, X. Liu, Y. Du, F. Gao, G. Camps-Valls, et al. "CloudRuler: Rule-based transformer for cloud removal in Landsat images". In: *Remote Sensing of Environment* 328 (2025), p. 114913.

[32] N. Longépé, H. Alemohammad, A. Anghelea, T. Brunschwiler, G. Camps-Valls, G. Cavallaro, J. Chanussot, J. M. Delgado, B. Demir, N. Dionelis, et al. "Earth Action in Transition: Highlights From the 2025 ESA–NASA International Workshop on AI Foundation Models for EO [Space-Agencies]". In: *IEEE Geoscience and Remote Sensing Magazine* 13.4 (2025), pp. 457–462.

[33] C. Ma, H. Li, J. Jiang, C. Aybar, J. Yao, and G. Camps-Valls. "Dynamics of Masked Image Modeling in Hyperspectral Image Classification". In: *IEEE Transactions on Geoscience and Remote Sensing* 63 (2025), pp. 1–15. DOI: 10.1109/TGRS.2025.3558432.

[34] N. Mankovich, S. Bouabid, P. Nowack, D. Bassotto, and G. Camps-Valls. "Analyzing climate scenarios using dynamic mode decomposition with control". In: *Environmental Data Science* 4 (2025), e16. DOI: 10.1017/eds.2025.8.

[35] N. Mankovich, K.-H. Cohrs, H. Durand, V. Sitokonstantinou, T. Williams, and G. Camps-Valls. "Dimensionality Reduction for Remote Sensing Data Analysis: A Systematic Review of Methods and Applications". In: *arXiv preprint arXiv:2510.18935* (2025).

[36] D. Montero, G. Kraemer, A. Anghelea, C. Aybar, G. Brandt, G. Camps-Valls, F. Cremer, I. Flik, F. Gans, S. Habershon, and et al. "Earth System Data Cubes: Avenues for advancing Earth system research". In: *Environmental Data Science* 3 (2025), e27. DOI: https://doi.org/10.1017/eds.2024.22.

[37] F. Müller, L. Eifler, F. Cremer, P. Beck, G. Camps-Valls, and A. Bastos. "Hybrid forest disturbance classification using Sentinel-1 and inventory data: a case-study for Southeastern USA". In: *EGUsphere* 2025 (2025), pp. 1–37.

[38] A. Paçal, B. Hassler, K. Weigel, M.-Á. Fernández-Torres, G. Camps-Valls, and V. Eyring. "Understanding European Heatwaves with Variational Autoencoders". In: *EGUsphere* 2025 (2025), pp. 1–35.

[39] R. Pascual García, J. F. Diez Pastor, P. Latorre Carmona, P. Pérez Núñez, G. Camps-Valls, J. M. Aroca Fernández, et al. "S4A-CyL: A Sentinel-2 Time Series Dataset for Deep Learning in Agriculture (2020-2024)". In: (2025). DOI: 10.71486/q4yz-p373.

[40] O. J. Pellicer-Valero, C. Aybar, and G. C. Valls. "Video Compression for Spatiotemporal Earth System Data". In: *arXiv preprint arXiv:2506.19656* (2025). DOI: https://doi.org/10.48550/arXiv.2506.19656.

[41] O. J. Pellicer-Valero, M.- Fernández-Torres, C. Ji, M. D. Mahecha, and G. Camps-Valls. "Explainable Earth Surface Forecasting Under Extreme Events". In: *Earth's Future* 13.9 (2025). e2024EF005446 2024EF005446, e2024EF005446. DOI: https://doi.org/10.1029/2024EF005446. URL: https://agupubs.onlinelibrary.wiley.com/doi/abs/10.1029/2024EF005446.

[42] P. Pelucchi, J. V. Servera, P. Stier, and G. Camps-Valls. "Invertible Neural Networks for Probabilistic Aerosol Optical Depth Retrieval". In: *IEEE Transactions on Geoscience and Remote Sensing* (2025), pp. 1–1. DOI: 10.1109/TGRS.2025.3540173.

[43] I. Prapas, N. Papadopoulos, N.-I. Bountos, D. Michail, G. Camps-Valls, and I. Papoutsis. "TeleViT1. 0: Teleconnection-aware Vision Transformers for Subseasonal to Seasonal Wildfire Pattern Forecasts". In: *arXiv preprint arXiv:2512.00089* (2025).

[44] M. Reichstein, D. Frank, V. Benson, G. Camps-Valls, J. Denzler, K. Kornhuber, B. Schoelkopf, R. Vinuesa, B. Han, C. Fearnley, et al. "Early warning of complex climate risk with integrated artificial intelligence". In: *Nature Communications* (2025). DOI: https://doi.org/10.1038/s41467-025-57640-w.

[45] I. Tsoumas, V. Sitokonstantinou, G. Giannarakis, E. Lampiri, C. Athanassiou, G. Camps-Valls, C. Kontoes, and I. N. Athanasiadis. "Leveraging causality and explainability in digital agriculture". In: *Environmental Data Science* 4 (2025), e23. DOI: 10.1017/eds.2025.14.

[46] T. K. E. Williams, Á. Moreno Martínez, F. Martinuzzi, M. D. Mahecha, and G. Camps-Valls. "Sub-Seasonal Forest Carbon Dynamics Lose Persistence Under Extremes". In: *Environmental Research Letters* (2025). DOI: 10.1088/1748-9326/ade8ff.

[47] Q. Xu, J. L. Bamber, N. Thuerey, N. Boers, P. Bates, G. Camps-Valls, Y. Shi, and X. X. Zhu. "Physically consistent and uncertainty-aware learning of spatiotemporal dynamics". In: *arXiv preprint arXiv:2510.21023* (2025).

[48] M. Zhang, M.- Fernández-Torres, K.-H. Cohrs, and G. Camps-Valls. "Calibration and uncertainty quantification for deep learning-based drought detection". In: *International Journal of Applied Earth Observation and Geoinformation* 140 (2025), p. 104563. ISSN: 1569-8432. DOI: https://doi.org/10.1016/j.jag.2025.104563. URL: https://www.sciencedirect.com/science/article/pii/S1569843225002109.

[49] M. Anand, F. Bohn, G. Camps-Valls, R. Fischer, A. Huth, L.-B. Sweet, and J. Zscheischler. "Identifying compound weather drivers of forest mortality with generative deep learning". In: *Environmental Data Science* 3 (Feb. 2024). DOI: https://doi.org/10.1017/eds.2024.2.

[50] M. Anand, F. J. Bohn, G. Camps-Valls, R. Fischer, A. Huth, L.-b. Sweet, and J. Zscheischler. "Identifying compound weather drivers of forest biomass loss with generative deep learning". In: *Environmental Data Science* 3 (2024), e4. DOI: https://doi.org/10.1017/eds.2024.2.

[51] L. Brocca, C. Massari, S. Camici, A. Tarpanelli, L. Ciabatta, S. Barbetta, J. Dari, H. Mosaffa, P. Filippucci, S. Modanesi, B. Bonaccorsi, W. Wagner, M. Vreugdenhil, R. Quast, R. Alfieri, S. Gabellani, F. Avanzi, D. Rains, D. Miralles, S. Mantovani, C. Briese, A. Domeneghetti, A. Jacob, M. Castelli, G. Camps-Valls, E. Volden, and D. Fernandez. "A Digital Twin of the terrestrial water cycle: a glimpse into the future through high-resolution Earth Observations". In: *Frontiers in Science* (2024). DOI: https://doi.org/10.3389/fsci.2023.1190191.

[52] D. Chaparro, T. Jagdhuber, M. Piles, F. Jonard, A. Fluhrer, M. Vall-llossera, A. Camps, C. López-Martínez, R. Fernández-Morán, M. Baur, et al. "Vegetation moisture estimation in the Western United States using radiometer-radar-lidar synergy". In: *Remote Sensing of Environment* 303 (2024), p. 113993. ISSN: 0034-4257. DOI: 10.1016/j.rse.2024.113993. URL: https://www.sciencedirect.com/science/article/pii/S003442572400004X.

[53] M. Chen, Z. Qian, N. Boers, F. Creutzig, G. Camps-Valls, K. Hubacek, C. Claramunt, J. P. Wilson, S. Nativi, A. J. Jakeman, et al. "Collaboration between artificial intelligence and Earth science communities for mutual benefit". In: *Nature Geoscience* 17.10 (2024), pp. 949–952. DOI: https://doi.org/10.1038/s41561-024-01550-x.

[54] K.-H. Cohrs, E. Diaz, V. Sitokonstantinou, G. Varando, and G. Camps-Valls. "Large Language Models for Causal Hypothesis Generation in Science". In: *Machine Learning: Science and Technology* (2024). DOI: 10.1088/2632-2153/ada47f.

[55] K.-H. Cohrs, G. Varando, N. Carvalhais, M. Reichstein, and G. Camps-Valls. "Causal hybrid modeling with double machine learning - Applications in carbon flux modeling". In: *Machine Learning: Science and Technology* 5.3 (2024), p. 035021. DOI: 10.1088/2632-2153/ad5a60.

[56] K.-H. Cohrs, G. Varando, N. Carvalhais, M. Reichstein, and G. Camps-Valls. "Causal hybrid modeling with double machine learning—applications in carbon flux modeling". In: *Machine Learning: Science and Technology* 5.3 (2024), p. 035021. DOI: https://doi.org/10.1088/2632-2153/ad5a60.

[57] J. Cortés-Andrés, M.-Á. Fernández-Torres, and G. Camps-Valls. "Deep Learning with Noisy Labels for Spatio-Temporal Drought Detection". In: *IEEE Transactions on Geoscience and Remote Sensing* (2024), pp. 1–12. DOI: https://doi.org/10.1109/TGRS.2024.3504340.

[58] V Eyring, P Gentine, G Camps-Valls, D Lawrence, and M Reichstein. "AI-empowered Next-generation Multiscale Climate Modeling for Mitigation and Adaptation". In: *Nature Geosciences* (2024).

[59] V. Eyring, P. Gentine, G. Camps-Valls, D. M. Lawrence, and M. Reichstein. "AI-empowered next-generation multiscale climate modelling for mitigation and adaptation". In: *Nature Geoscience* 17.10 (2024), pp. 963–971. DOI: 10.1038/s41561-024-01527-w.

[60] M. Gonzalez-Calabuig, J. Cortés-Andrés, T. K. Williams, M. Zhang, O. J. Pellicer-Valero, M.-A. Fernández-Torres, and G. Camps-Valls. "The AIDE Toolbox: AI for Disentangling Extreme Events". In: *IEEE Geoscience and Remote Sensing Magazine* 12.2 (2024), pp. 113–118. DOI: https://doi.org/10.1109/MGRS.2024.3382544.

[61] J. Gonzalez, S. Dipu, O. Sourdeval, A. Siméon, G. Camps-Valls, and J. Quaas. "Emulation of Forward Modelled Top-Of-Atmosphere MODIS-based Spectral Channels using Machine Learning". In: *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing* (2024). DOI: 10.1109/JSTARS.2024.3507692.

[62] W Hazeleger, J. Aerts, P. Bauer, M. Bierkens, G. Camps-Valls, M. Dekker, F. Doblas-Reyes, V. Eyring, C Finkenauer, A. Grundner, et al. "Digital twins of the Earth with and for humans". In: *Nature Geoscience* 5.1 (2024), p. 463. DOI: https://doi.org/10.1038/s43247-024-01626-x.

[63] F. Martinuzzi, M. D. Mahecha, G. Camps-Valls, D. Montero, T. Williams, and K. Mora. "Learning extreme vegetation response to climate drivers with recurrent neural networks". In: *Nonlinear Processes in Geophysics* 31.4 (2024), pp. 535–557. DOI: https://doi.org/10.5194/npg-31-535-2024.

[64] J. A. Nelson, S. Walther, F. Gans, B. Kraft, U. Weber, K. Novick, N. Buchmann, M. Migliavacca, G. Wohlfahrt, L. Šigut, G. Camps-Valls, et al. "X-BASE: the first terrestrial carbon and water flux products from an extended data-driven scaling framework, FLUXCOM-X". In: *Biogeosciences* 21.22 (2024), pp. 5079–5115. DOI: 10.5194/bg-21-5079-2024.

[65] C Rajadel-Lambistos, E Izquierdo-Verdiguier, A Moreno-Martínez, M. Maneta, S Begueria, J. Kimball, N Clinton, C Atzberger, G Camps-Valls, and S. Running. "Within-season crop monitoring at continental scale utilizing new gap-filled Landsat temporal series". In: *International Journal of Digital Earth* 17.1 (2024), p. 2359577. DOI: https://doi.org/10.1080/17538947.2024.2359577.

[66] W. Song, S. Jiang, G. Camps-Valls, M. Williams, L. Zhang, M. Reichstein, H. Vereecken, L. He, X. Hu, and L. Shi. "Towards data-driven discovery of governing equations in geosciences". In: *Communications Earth & Environment* 5.1 (2024), p. 589. DOI: https://doi.org/10.1038/s43247-024-01760-6.

[67] J. M. Tárraga, E. Sevillano-Marco, J. Muñoz-Marí, M. Piles, V. Sitokonstantinou, M. Ronco, M. T. Miranda, J. Cerdà, and G. Camps-Valls. "Causal discovery reveals complex patterns of drought-induced displacement". In: *Iscience* 27.9 (2024). DOI: https://doi.org/10.1016/j.isci.2024.110628. URL: https://www.cell.com/iscience/fulltext/S2589-0042(24)01853-4.

[68] D. Tuia, K. Schindler, B. Demir, X. X. Zhu, M. Kochupillai, S. Džeroski, J. N. van Rijn, H. H. Hoos, F. Del Frate, M. Datcu, G. Camps-Valls, et al. "Artificial Intelligence to Advance Earth Observation: A review of models, recent trends, and pathways forward". In: *IEEE Geoscience and Remote Sensing Magazine* (2024). DOI: https://doi.org/10.1109/MGRS.2024.3425961.

[69] G. Varando, S. Catsis, E. Diaz, and G. Camps-Valls. "Pairwise causal discovery with support measure machines". In: *Applied Soft Computing* 150 (2024), p. 111030. ISSN: 1568-4946. DOI: 10.1016/j.asoc.2023.111030.

[70] G. Varando, S. Catsis, E. Diaz, and G. Camps-Valls. "Pairwise causal discovery with support measure machines". In: *Applied Soft Computing* 150 (2024), p. 111030. ISSN: 1568-4946.

[71] J. Vicent, L. Martino, J. Verrelst, J. Rivera Caicedo, and G. Camps-Valls. "Multioutput Feature Selection for Emulation and Sensitivity Analysis". In: *IEEE Transactions on Geoscience and Remote Sensing* 62 (2024), pp. 1–11. DOI: doi.org/10.1109/TGRS.2024.3358231.

[72] M. Zhang, M.-Á. Fernández-Torres, and G. Camps-Valls. "Domain knowledge-driven variational recurrent networks for drought monitoring". In: *Remote Sensing of Environment* 311 (2024), p. 114252. ISSN: 0034-4257. DOI: https://doi.org/10.1016/j.rse.2024.114252. URL: https://www.sciencedirect.com/science/article/pii/S0034425724002700.

[73] D. Zheng, H. Zhong, G. Camps-Valls, Z. Cao, X. Ma, B. Mills, X. Hu, M. Hou, and C. Ma. "Explainable Deep Learning for Automatic Rock Classification". In: *Computers & Geosciences* (2024). DOI: https://doi.org/10.1016/j.cageo.2023.105511. URL: https://zenodo.org/records/7634024.

[74] D. Bueso, M. Piles, and G. Camps-Valls. "Let's consider more general nonlinear approaches to study teleconnections of climate variables". In: *Commentary a paper in the Journal of Climate* (2023), pp. 1–5. DOI: https://doi.org/10.48550/arXiv.2212.07635.

[75] D. Bueso, M. Piles, P. Ciais, J.-P. Wigneron, Moreno-Martínez, and G. Camps-Valls. "Soil and vegetation water content identify the main terrestrial ecosystem changes". In: *National Science Review* 10.5 (Feb. 2023). nwad026. ISSN: 2095-5138. DOI: https://doi.org/10.1093/nsr/nwad026.

[76] M. Campos-Taberner, F. J. García-Haro, B. Martínez, S. Sánchez-Ruiz, Á. Moreno-Martínez, G. Camps-Valls, and M. A. Gilabert. "Land use classification over smallholding areas in the European Common Agricultural Policy framework". In: *ISPRS Journal of Photogrammetry and Remote Sensing* 197 (2023), pp. 320–334. ISSN: 0924-2716. DOI: 10.1016/j.isprsjprs.2023.02.005.

[77] G. Camps-Valls, A. Gerhardus, U. Ninad, G. Varando, G. Martius, E. Balaguer-Ballester, R. Vinuesa, E. Diaz, L. Zanna, and J. Runge. "Discovering causal relations and equations from data". In: *Physics Reports* 1044 (2023), pp. 1–68. ISSN: 0370-1573. DOI: 10.1016/j.physrep.2023.10.005.

[78] M. F. Celik, M. S. Isik, G. Taskin, E. Erten, and G. Camps-Valls. "Explainable artificial intelligence for cotton yield prediction with multisource data". In: *IEEE Geoscience and Remote Sensing Letters* (2023). DOI: 10.1109/LGRS.2023.3303643.

[79] M. F. Celik, M. S. Isik, G. Taskin, E. Erten, and G. Camps-Valls. "Explainable Artificial Intelligence for Cotton Yield Prediction with Multisource Data". In: *IEEE Geoscience and Remote Sensing Letters* (2023), pp. 1–1. DOI: 10.1109/lgrs.2023.3303643.

[80] A. Diaz, J. Johnson, G. Varando, and G. Camps-Valls. "Learning latent functions for causal discovery". In: *Machine Learning: Science and Technology* 4.3 (2023), pp. 1–44. DOI: 10.1088/2632-2153/ace151.

[81] K. Jeggle, D. Neubauer, G. Camps-Valls, and U. Lohmann. "Understanding cirrus clouds using explainable machine learning". In: *Environmental Data Science* (July 2023). DOI: https://doi.org/10.1017/eds.2023.14.

[82] K. Jeggle, D. Neubauer, G. Camps-Valls, and U. Lohmann. "Understanding cirrus clouds using explainable machine learning". In: *Environmental Data Science* 2 (2023), e19. DOI: https://doi.org/10.1017/eds.2023.14.

[83] A. Kaps, A. Lauer, G. Camps-Valls, P. Gentine, L. Gómez-Chova, and V. Eyring. "Machine-learned cloud classes from satellite data for process-oriented climate model evaluation". In: *IEEE Transactions on Geoscience and Remote Sensing* 61 (Jan. 2023), pp. 1–15. DOI: https://doi.org/10.1109/TGRS.2023.3237008.

[84] A. Kaps, A. Lauer, G. Camps-Valls, P. Gentine, L. Gómez-Chova, and V. Eyring. "Machine-learned cloud classes from satellite data for process-oriented climate model evaluation". In: *IEEE Transactions on Geoscience and Remote Sensing* 61 (2023), pp. 1–15. DOI: 10.1109/TGRS.2023.3237008.

[85] L. Li, J.-F. Wang, M. Franklin, Q. Yin, J. Wu, G. Camps-Valls, Z. Zhu, C. Wang, Y. Ge, and M. Reichstein. "Improving air quality assessment using physics-inspired deep graph learning". In: *npj Climate and Atmospheric Science* (2023). DOI: https://doi.org/10.1038/s41612-023-00475-3.

[86] L. Li, J. Wang, M. Franklin, Q. Yin, J. Wu, G. Camps-Valls, Z. Zhu, C. Wang, Y. Ge, and M. Reichstein. "Improving air quality assessment using physics-inspired deep graph learning". In: *npj Climate and Atmospheric Science* 6.1 (2023), p. 152. DOI: 10.1038/s41612-023-00475-3.

[87] E. Martinez, G. Camps-Valls, R. Fablet, and C. Jamet. "AI and Remote Sensing in Ocean Sciences". In: *Frontiers in Marine Science* Editorial presenting the special issue 'Frontiers in Marine Science' (2023). DOI: https://doi.org/10.3389/fmars.2023.1248591.

[88] A. Mateo-Sanchis, J. E. Adsuara, M. Piles, J. Munoz-Marí, A. Perez-Suay, and G. Camps-Valls. "Interpretable Long-Short Term Memory Networks for Crop Yield Estimation". In: *IEEE Geoscience and Remote Sensing Letters* 20 (Feb. 2023), pp. 1–5. DOI: 10.1109/LGRS.2023.3244064.

[89] A. Perez-Suay, P. Gordaliza, J.-M. Loubes, D. Sejdinovic, and G. Camps-Valls. "Fair Kernel Regression through Cross-Covariance Operators". In: *Transactions on Machine Learning Research* (2023). ISSN: 2835-8856. URL: https://openreview.net/forum?id=MyQ1e1VQQ3.

[90] M. Ronco and G. Camps-Valls. "Role of locality, fidelity and symmetry regularization in learning explainable representations". In: *Neurocomputing* (2023), p. 126884. DOI: 10.1016/j.neucom.2023.126884.

[91] M. Ronco, J. Tárraga Habas, J. Muñoz Marí, M. Piles, E. Sevillano Marco, Q. Wang, M. Miranda Espinosa, S. Ponserre, and G. Camps-Valls. "Exploring interactions between socioeconomic context and natural hazards on human population displacement". In: *Nature Communications* 14.1 (2023), p. 8004. DOI: https://doi.org/10.1038/s41467-023-43809-8. URL: https://www.nature.com/articles/s41467-023-43809-8.

[92] M. Ronco, J. M. Tárraga, J. Muñoz, M. Piles, E. S. Marco, Q. Wang, M. T. M. Espinosa, S. Ponserre, and G. Camps-Valls. "Exploring interactions between socioeconomic context and natural hazards on human population displacement". In: *Nature Communications* 14.1 (2023), p. 8004.

[93] J. Runge, A. Gerhardus, G. Varando, V. Eyring, and G. Camps-Valls. "Causal inference for time series". In: *Nature Reviews Earth & Environment* 4.7 (2023), pp. 487–505. DOI: 10.1038/s43017-023-00431-y.

[94] J. Runge, A. Gerhardus, G. Varando, V. Eyring, and G. Camps-Valls. "Causal inference for time series". In: *Nature Reviews Earth & Environment* 10 (2023), p. 2553. DOI: http://dx.doi.org/10.1038/s43017-023-00431-y.

[95] J. Runge, A. Gerhardus, G. Varando, V. Eyring, and G. Camps-Valls. "Publisher Correction: Causal inference for time series". In: *Nature Reviews Earth & Environment* 4.8 (2023), pp. 596–596. DOI: https://doi.org/10.1038/s43017-023-00471-4.

[96] J. V. Servera, L. Martino, J. Verrelst, and G. Camps-Valls. "Multifidelity Gaussian process emulation for atmospheric radiative transfer models". In: *IEEE Transactions on Geoscience and Remote Sensing* 61 (2023), pp. 1–10. DOI: 10.1109/TGRS.2023.3300460.

[97] D. H. Svendsen, D. Hernandez-Lobato, L. Martino, V. Laparra, A. Moreno-Martinez, and G. Camps-Valls. "Inference over radiative transfer models using variational and expectation maximization methods". In: *Machine Learning* 112.3 (2023), pp. 921–937. DOI: 10.1007/s10994-021-05999-4.

[98] D. Svendsen, D. Hernàndez-Lobato, V. Laparra, L. Martino, A. Moreno-Martínez, and G. Camps-Valls. "Inference over Radiative Transfer Models using Variational and Expectation Maximization Methods". In: *Machine Learning* 112 (June 2023), pp. 921–937. DOI: https://doi.org/10.1007/s10994-021-05999-4.

[99] G. Taskin, E. Yetkin, and G. Camps-Valls. "A Scalable Unsupervised Feature Selection with Orthogonal Graph Representation for Hyperspectral Images". In: *IEEE Transactions on Geoscience and Remote Sensing* 61 (2023), p. 5514913. DOI: https://doi.org/10.1109/TGRS.2023.3284475.

[100] G. Taskin, E. F. Yetkin, and G. Camps-Valls. "A scalable unsupervised feature selection with orthogonal graph representation for hyperspectral images". In: *IEEE Transactions on Geoscience and Remote Sensing* 61 (2023), pp. 1–13. DOI: 10.1109/TGRS.2023.3284475.

[101] D. Tuia, K. Schindler, B. Demir, G. Camps-Valls, X. X. Zhu, M. Kochupillai, S. Džeroski, J. N. van Rijn, H. H. Hoos, F. Del Frate, et al. "Artificial intelligence to advance Earth observation: : A review of models, recent trends, and pathways forward". In: *IEEE Geoscience and Remote Sensing Magazine* (2023). DOI: 10.1109/mgrs.2024.3425961.

[102] J. Vicent, L. Martino, L. Verrelst, and G. Camps-Valls. "Multifidelity Gaussian Process Emulation for Atmospheric Radiative Transfer Models". In: *IEEE Transactions on Geoscience and Remote Sensing* 61 (2023), pp. 1–10. DOI: https://doi.org/10.1109/TGRS.2023.3300460.

[103] Q. Wang, Á. Moreno-Martínez, J. Muñoz-Marí, M. Campos-Taberner, and G. Camps-Valls. "Estimation of vegetation traits with kernel NDVI". In: *ISPRS Journal of Photogrammetry and Remote Sensing* 195 (2023), pp. 408–417. ISSN: 0924-2716. DOI: 10.1016/j.isprsjprs.2022.12.019.

[104] G. Camps-Valls. "Commentary on 'Physics-informed deep learning parameterization of ocean vertical mixing improves climate simulations' by Zhu et al." In: *National Science Review* (May 2022), pp. 1–2. DOI: https://doi.org/10.1093/nsr/nwac092.

[105] G. Camps-Valls, M. Campos-Taberner, V. Laparra, L. Martino, and J. Muñoz Marí. "Retrieval of Physical Parameters with Deep Structured Kernel Regression". In: *IEEE Transactions on Geoscience and Remote Sensing* 60 (2022), pp. 1–10. DOI: https://doi.org/10.1109/TGRS.2022.3211554.

[106] G. Camps-Valls. "Commentary on 'Physics-informed deep learning parameterization of ocean vertical mixing improves climate simulations' by Zhu et al." In: *National Science Review* 9.8 (2022), nwac092. DOI: https://doi.org/10.1093/nsr/nwac092.

[107] G. Camps-Valls, M. Campos-Taberner, V. Laparra, L. Martino, and J. Muñoz-Marí. "Retrieval of Physical Parameters With Deep Structured Kernel Regression". In: *IEEE Transactions on Geoscience and Remote Sensing* 60 (2022), pp. 1–10. DOI: 10.1109/TGRS.2022.3211554.

[108] J. Cortés-Andrés, G. Camps-Valls, S. Sippel, E. Székely, D. Sejdinovic, E. Diaz, A. Pérez-Suay, Z. Li, M. Mahecha, and M. Reichstein. "Physics-aware Nonparametric Regression Models for Earth Data Analysis". In: *Environmental Research Letters* 17.5 (2022). DOI: 10.1088/1748-9326/ac6762.

[109] E. Diaz, J. Adsuara, A. Moreno-Martinez, M. Piles, and G. Camps-Valls. "Inferring causal relations from observational long-term carbon and water fluxes records". In: *Scientific Reports* 12.1 (2022), p. 1610. DOI: 10.1038/s41598-022-05377-7.

[110] E. Diaz, J. Adsuara, A. Moreno-Martinez, M. Piles, and G. Camps-Valls. "Inferring causal relations from observational long-term carbon and water fluxes records". In: *Scientific Reports* 12 (2022), p. 1610. DOI: https://doi.org/10.1038/s41598-022-05377-7.

[111] S. Kondylatos, I. Prapas, M. Ronco, I. Papoutsis, G. Camps-Valls, M. Piles, M. Fernández-Torres, and N. Carvalhais. "Wildfire Danger Prediction and Understanding with Deep Learning". In: *Geophysical Research Letters* (Nov. 2022), pp. 1–12. DOI: https://doi.org/10.1029/2022GL099368.

[112] S. Kondylatos, I. Prapas, M. Ronco, I. Papoutsis, G. Camps-Valls, M. Piles, M. Fernández-Torres, and N. Carvalhais. "Wildfire Danger Prediction and Understanding with Deep Learning". In: *Geophysical Research Letters* 49.17 (Nov. 2022), pp. 1–12. DOI: 10.1029/2022gl099368.

[113] J. Li, Z. Wu, Q. Sheng, B. Wang, Z. Hu, S. Zheng, G. Camps-Valls, and M. Molinier. "A hybrid generative adversarial network for weakly-supervised cloud detection in multispectral images". In: *Remote Sensing of Environment* 280 (2022), p. 113197. ISSN: 0034-4257. DOI: 10.1016/j.rse.2022.113197.

[114] Z. Li, A. Pérez-Suay, G. Camps-Valls, and D. Sejdinovic. "Kernel dependence regularizers and Gaussian processes with applications to algorithmic fairness". In: *Pattern Recognition* 132 (2022), p. 108922. ISSN: 0031-3203. DOI: https://doi.org/10.1016/j.patcog.2022.108922.

[115] L. Martínez-Ferrer, A. Moreno-Martínez, M. Campos-Taberner, F. García-Haro, J. Muñoz-Marí, S. Running, J. Kimball, N. Clinton, and G. Camps-Valls. "Quantifying uncertainty in high resolution biophysical variable retrieval with machine learning". In: *Remote Sensing of Environment* 280 (2022), p. 113199. DOI: https://doi.org/10.1016/j.rse.2022.113199.

[116] L. Martínez-Ferrer, Moreno-Martínez, M. Campos-Taberner, F. J. García-Haro, J. Muñoz-Marí, S. W. Running, J. Kimball, N. Clinton, and G. Camps-Valls. "Quantifying uncertainty in high resolution biophysical variable retrieval with machine learning". In: *Remote Sensing of Environment* 280 (2022), p. 113199. ISSN: 0034-4257. DOI: 10.1016/j.rse.2022.113199.

[117] J. Padron, V. Laparra, and G. Camps-Valls. "Unsupervised Anomaly and Change Detection with Multivariate Gaussianization". In: *IEEE Transactions on Geoscience and Remote Sensing* 60 (2022), pp. 1–10. DOI: 10.1109/TGRS.2021.3116186.

[118] C. Persello, J. Wegner, R. Hänsch, D. Tuia, P. Ghamisi, M. Koeva, and G. Camps-Valls. "Deep Learning and Earth Observation to Support the Sustainable Development Goals: Current approaches, open challenges, and future opportunities". In: *IEEE Geoscience and Remote Sensing Magazine* 10.2 (2022), pp. 172–200. ISSN: 2168-6831. DOI: 10.1109/MGRS.2021.3136100.

[119] M. Piles, J. Muñoz-Marí, A. Guerrero-Curieses, G. Camps-Valls, and J. L. Rojo-Álvarez. "Autocorrelation Metrics to Estimate Soil Moisture Persistence From Satellite Time Series: Application to Semiarid Regions". In: *IEEE Transactions on Geoscience and Remote Sensing* 60 (2022), pp. 1–17. DOI: https://doi.org/10.1109/TGRS.2021.3057928.

[120] G. Portal, M. Vall-llossera, M. Piles, T. Jagdhuber, A. Camps, M. Pablos, C. López-Martínez, N. N. Das, and D. Entekhabi. "Impact of incidence angle diversity on SMOS and Sentinel-1 soil moisture retrievals at coarse and fine Scales". In: *IEEE Transactions on Geoscience and Remote Sensing* 60 (2022), pp. 1–18. DOI: 10.1109/TGRS.2022.3187467.

[121] S. Salcedo-Sanz, D. Casillas-Pérez, J. Del Ser, C. Casanova-Mateo, L. Cuadra, M. Piles, and G. Camps-Valls. "Persistence in complex systems". In: *Physics Reports* 957 (Apr. 2022), pp. 1–73. DOI: 10.1016/j.physrep.2022.02.002.

[122] D. Svendsen, M. Piles, J. Muñoz Marí, D. Luengo, L. Martino, and G. Camps-Valls. "Integrating Domain Knowledge in Data-driven Earth Observation with Process Convolutions". In: *IEEE Transactions on Geoscience and Remote Sensing* (2022), pp. 1–15. DOI: 10.1109/TGRS.2021.3059550. URL: http://isp.uv.es/lfm/.

[123] G. Taskin and G. Camps-Valls. "Graph Embedding via High Dimensional Model Representation for Hyperspectral Images". In: *IEEE Transactions on Geoscience and Remote Sensing* 60 (Feb. 2022), pp. 1–11. ISSN: 0196-2892. DOI: 10.1109/TGRS.2021.3133957.

[124] D. Watson-Parris, Y. Rao, D. Olivié, Seland, P. Nowack, G. Camps-Valls, P. Stier, S. Bouabid, M. Dewey, E. Fons, J. Gonzalez, P. Harder, K. Jeggle, J. Lenhardt, P. Manshausen, M. Novitasari, L. Ricard, and C. Roesch. "ClimateBench v1.0: A Benchmark for Data-Driven Climate Projections". In: *Journal of Advances in Modeling Earth Systems* 14.10 (2022). e2021MS002954 2021MS002954, e2021MS002954. DOI: https://doi.org/10.1029/2021MS002954.

[125] D. Watson-Parris, Y. Rao, D. Olivié, Ø. Seland, P. Nowack, G. Camps-Valls, P. Stier, S. Bouabid, M. Dewey, E. Fons, et al. "ClimateBench v1.0: A Benchmark for Data-Driven Climate Projections". In: *Journal of Advances in Modeling Earth Systems* 14.10 (2022). e2021MS002954 2021MS002954, e2021MS002954. DOI: 10.1029/2021ms002954.

[126] K. Blix, A. Ruescas, E. Johnson, and G. Camps-Valls. "Learning Relevant Features of Optical Water Types". In: *IEEE Geoscience and Remote Sensing Letters* 19 (Apr. 2021). DOI: https://doi.org/10.1109/LGRS.2021.3072049.

[127] K. Blix, A. B. Ruescas, J. E. Johnson, and G. Camps-Valls. "Learning relevant features of optical water types". In: *IEEE Geoscience and Remote Sensing Letters* 19 (2021), pp. 1–5. DOI: 10.1109/LGRS.2021.3072049.

[128] G. Camps-Valls. "Perspective on deep learning for earth sciences". In: *Generalization with Deep Learning: for Improvement on Sensing Capability* (2021), pp. 159–173. DOI: https://doi.org/10.1142/9789811218842_0007.

[129] G. Camps-Valls, M. Campos-Taberner, Moreno-Martínez, S. Walther, G. Duveiller, A. Cescatti, M. D. Mahecha, J. Muñoz-Marí, F. J. García-Haro, L. Guanter, et al. "A unified vegetation index for quantifying the terrestrial biosphere". In: *Science Advances*. 7.9 (2021). DOI: 10.1126/sciadv.abc7447.

[130] G. Duveiller, G. Camps-Valls, G. Ceccherini, and A. Cescatti. "Spatial homogeneity from temporal stability: Exploiting the combined hyper-frequent revisit of Terra and Aqua to guide Earth System Science". In: *Remote Sensing of Environment* 261 (2021), p. 112496. ISSN: 0034-4257. DOI: 10.1016/j.rse.2021.112496.

[131] G. Forzieri, M. Girardello, G. Ceccherini, J. Spinoni, L. Feyen, H. Hartmann, P. Beck, G. Camps-Valls, G. Chirici, A. Mauri, and A. Cescatti. "Emergent vulnerability to climate-driven disturbances in European forests". In: *Nature Communications* 12.1081 (Feb. 2021). DOI: 10.1038/s41467-021-21399-7.

[132] G. Forzieri, M. Girardello, G. Ceccherini, J. Spinoni, L. Feyen, H. Hartmann, P. Beck, G. Camps-Valls, G. Chirici, A. Mauri, and A. Cescatti. "Emergent vulnerability to climate-driven disturbances in European forests". In: *Nature Communications* 12.1081 (Feb. 2021). DOI: https://doi.org/10.1038/s41467-021-21399-7.

[133] J. E. Johnson, V. Laparra, A. Pérez-Suay, M. D. Mahecha, and G. Camps-Valls. "Correction: Kernel methods and their derivatives: Concept and perspectives for the earth system sciences". In: *Plos One* 16.2 (Feb. 2021), pp. 1–1. DOI: https://doi.org/10.1371/journal.pone.0246775.

[134] J. E. Johnson, V. Laparra, A. Pérez-Suay, M. D. Mahecha, and G. Camps-Valls. "Correction: Kernel methods and their derivatives: Concept and perspectives for the earth system sciences". In: *Plos One* 16.2 (Feb. 2021), e0246775. DOI: https://doi.org/10.1371/journal.pone.0235885. URL: https://journals.plos.org/plosone/article/file?id=10.1371/journal.pone.0246775&type=printable.

[135] J. E. Johnson, V. Laparra, M. Piles, and G. Camps-Valls. "Gaussianizing the Earth: Multidimensional Information Measures for Earth Data Analysis". In: *IEEE Geoscience and Remote Sensing Magazine* 9.4 (2021), pp. 191–208.

[136] F. Llorente, L. Martino, D Delgado-Gómez, and G. Camps-Valls. "Deep importance sampling based on regression for model inversion and emulation". In: *Digital Signal Processing* 116 (2021), p. 103104. DOI: 10.1016/j.dsp.2021.103104.

[137] L. Martínez-Ferrer, M. Piles, and G. Camps-Valls. "Crop Yield Estimation and Interpretability With Gaussian Processes". In: *IEEE Geoscience and Remote Sensing Letters* 18.2 (Dec. 2021), pp. 2043–2047. DOI: 10.1109/LGRS.2020.3016140.

[138] L. Martino, V. Elvira, J. López-Santiago, and G. Camps-Valls. "Compressed particle methods for expensive models with application in Astronomy and Remote Sensing". In: *Transactions on Aerospace and Electronic Systems* 57.5 (Oct. 2021), pp. 2607–2621. DOI: 10.1109/TAES.2021.3061791.

[139] A. Mateo-Sanchis, M. Piles, J. Amoros-López, J. Muñoz-Marí, J. Adsuara, Moreno-Martínez, and G. Camps-Valls. "Learning main drivers of crop progress and failure in Europe with interpretable machine learning". In: *International Journal of Applied Earth Observation and Geoinformation* (2021). DOI: https://doi.org/10.1016/j.jag.2021.102574.

[140] A. Mateo-Sanchis, M. Piles, J. Amorós-López, J. Muñoz-Marí, J. E. Adsuara, Moreno-Martínez, and G. Camps-Valls. "Learning main drivers of crop progress and failure in Europe with interpretable machine learning". In: *International Journal of Applied Earth Observation and Geoinformation* 104 (2021), p. 102574. DOI: 10.1016/j.jag.2021.102574.

[141] V. Nieves, C. Radin, and G. Camps-Valls. "Predicting regional coastal sea level changes with machine learning". In: *Scientific Reports* 11.1 (Apr. 2021), p. 7650. ISSN: 2045-2322. DOI: 10.1038/s41598-021-87460-z.

[142] M. Piles, J. Muñoz-Marí, A. Guerrero-Curieses, G. Camps-Valls, and J. L. Rojo-Álvarez. "Autocorrelation metrics to estimate soil moisture persistence from satellite time series: application to semiarid regions". In: *IEEE Transactions on Geoscience and Remote Sensing* 60 (2021), pp. 1–17. DOI: 10.1109/TGRS.2021.3057928.

[143] S. Salcedo-Sanz, M. Piles, L. Cuadra, C. Casanova-Mateo, A. J. Caamaño, J. Sanz-Justo, E. Cerro-Prada, and G. Camps-Valls. "Long-term Persistence, Invariant Time Scales and On-off Intermittency of Fog Events". In: *Atmospheric Research* 252 (2021), Apr. DOI: 10.1016/j.atmosres.2021.105456.

[144] S Salcedo-Sanz, M Piles, L Cuadra, C Casanova-Mateo, A. Caamaño, E Cerro-Prada, and G Camps-Valls. "Long-term persistence, invariant time scales and on-off intermittency of fog events". In: *Atmospheric Research* 252 (2021), p. 105456. DOI: 10.1016/j.atmosres.2021.105456.

[145] J. V. Servera, J. P. Rivera-Caicedo, J. Verrelst, J. Muñoz-Marí, N. Sabater, B. Berthelot, G. Camps-Valls, and J. Moreno. "Systematic assessment of MODTRAN emulators for atmospheric correction". In: *IEEE Transactions on Geoscience and Remote Sensing* 60 (2021), pp. 1–17. DOI: 10.1109/TGRS.2021.3071376.

[146] D. Tuia, R. Roscher, J. Wegner, N. Jacobs, X. Zhu, and G. Camps-Valls. "Towards a Collective Agenda on AI for Earth Science Data Analysis". In: *IEEE Geoscience and Remote Sensing Magazine* 9.2 (June 2021), pp. 88–104. DOI: 10.1109/MGRS.2020.3043504.

[147] J. Vicent, J. Rivera-Caicedo, J. Verrelst, B. Berthelot, N. Sabater, J. Muñoz-Marí, G. Camps-Valls, and J. Moreno. "Systematic assessment of MODTRAN emulators for atmospheric correction". In: *IEEE Transactions on Geoscience and Remote Sensing* 59 (Apr. 2021), pp. 1–14. DOI: https://doi.org/10.1109/TGRS.2021.3071376.

[148] K. Berger, J. Verrelst, J.-B. Feret, T. Hank, M. Wocher, and G. Camps-Valls. "Retrieval of aboveground crop nitrogen content with a hybrid machine learning method". In: *International Journal of Applied Earth Observations and Geoinformation* 92 (Oct. 2020), p. 102174. DOI: https://doi.org/10.1016/j.jag.2020.102174.

[149] K. Berger, J. Verrelst, J.-B. Féret, T. Hank, M. Wocher, W. Mauser, and G. Camps-Valls. "Retrieval of aboveground crop nitrogen content with a hybrid machine learning method". In: *International Journal of Applied Earth Observation and Geoinformation* 92 (Oct. 2020), p. 102174. DOI: 10.1016/j.jag.2020.102174.

[150] D. Bueso, M. Piles, and G. Camps-Valls. "Nonlinear PCA for Spatio-Temporal Analysis of Earth Observation Data". In: *IEEE Transactions on Geoscience and Remote Sensing* 58.8 (Aug. 2020), pp. 5752–5763. DOI: 10.1109/TGRS.2020.2969813.

[151] D. Bueso, M. Piles, and G. Camps-Valls. "Explicit Granger Causality in Kernel Hilbert Spaces". In: *Physical Review E* 102.6 (2020), p. 062201. DOI: 10.1103/physreve.102.062201.

[152] M. Campos-Taberner, F. J. García-Haro, B. Martínez, E. Izquierdo-Verdiguier, C. Atzberger, G. Camps-Valls, and M. A. Gilabert. "Understanding deep learning in land use classification based on Sentinel-2 time series". In: *Scientific reports* 10.1 (2020), p. 17188. DOI: 10.1038/s41598-020-74215-5.

[153] M. Campos-Taberner, J. F. García-Haro, B. Martínez, E. Izquierdo-Verdiguier, C. Atzberger, G. Camps-Valls, and M. A. Gilbert. "Understanding deep learning in land use classification from Sentinel-2 time series". In: *Scientific Reports* (2020), p. 12. DOI: https://doi.org/10.1038/s41598-020-74215-5.

[154] J. Estevez, J. Vicent, J. P. Rivera-Caicedo, P. Morcillo-Pallarés, F. Vuolo, N. Sabater, G. Camps-Valls, J. Moreno, and J. Verrelst. "Gaussian processes retrieval of LAI from Sentinel-2 top-of-atmosphere radiance data". In: *ISPRS Journal of Photogrammetry and Remote Sensing* (2020).

[155] J. Estévez, J. Vicent, J. P. Rivera-Caicedo, P. Morcillo-Pallarés, F. Vuolo, N. Sabater, G. Camps-Valls, J. Moreno, and J. Verrelst. "Gaussian processes retrieval of LAI from Sentinel-2 top-of-atmosphere radiance data". In: *ISPRS Journal of Photogrammetry and Remote Sensing* 167 (2020), pp. 289–304. DOI: 10.1016/j.isprsjprs.2020.07.004.

[156] F. García-Haro, M. Campos-Taberner, A. Moreno, H. Torbern Tagesson, F. Camacho, B. Martínez, S. Sánchez, M. Piles, G. Camps-Valls, M. Yebra, and M. Gilabert. "A global Canopy Water Content product from AVHRR/Metop". In: *ISPRS Journal of Photogrammetry and Remote Sensing* 161.7 (2020), pp. 1–18. DOI: 10.1016/j.isprsjprs.2020.02.007.

[157] J. A. P. Hidalgo, A. Pérez-Suay, F. Nar, and G. Camps-Valls. "Efficient Nonlinear RX Anomaly Detectors". In: *IEEE Geoscience and Remote Sensing Letters* 17 (2020).

[158] J. A. P. Hidalgo, A. Pérez-Suay, F. Nar, and G. Camps-Valls. "Efficient nonlinear RX anomaly detectors". In: *IEEE Geoscience and Remote Sensing Letters* 18.2 (2020), pp. 231–235. DOI: 10.1109/LGRS.2020.2970582.

[159] J. E. Johnson, V. Laparra, and G. Camps-Valls. "Accounting for input noise in Gaussian process parameter retrieval". In: *IEEE Geoscience and Remote Sensing Letters* 17.3 (Mar. 2020), pp. 391–395. DOI: https://doi.org/10.1109/LGRS.2019.2921476.

[160] J. E. Johnson, V. Laparra, and G. Camps-Valls. "Accounting for Input Noise in Gaussian Process Parameter Retrieval". In: *IEEE Geoscience and Remote Sensing Letters* 17.3 (Mar. 2020), pp. 391–395.

[161] J. E. Johnson, V. Laparra, A. Pérez-Suay, M. Mahecha, and G. Camps-Valls. "Kernel methods and their derivatives: Concept and perspectives for the Earth system sciences". In: *PLOS One* (2020). DOI: https://doi.org/10.1371/journal.pone.0235885.

[162] M. Jung, C. Schwalm, M. Migliavacca, S. Walther, G. Camps-Valls, S. Koirala, P. Anthoni, S. Besnard, P. Bodesheim, N. Carvalhais, F. Chevallier, F. Gans, D. S. Groll, V. Haverd, K. Ichii, A. K. Jain, J. Liu, D. Lombardozzi, J. E. M. S. Nabel, J. A. Nelson, M. Pallandt, D. Papale, W. Peters, J. Pongratz, C. Rödenbeck, S. Sitch, G. Tramontana, U. Weber, M. Reichstein, P. Koehler, M. O'Sullivan, and A. Walker. "Scaling carbon fluxes from eddy covariance sites to globe: Synthesis and evaluation of the FLUXCOM approach". In: *Biogeosciences* 17 (2020), pp. 1343–1365. DOI: https://doi.org/10.5194/bg-2019-368.

[163] M. Jung, C. Schwalm, M. Migliavacca, S. Walther, G. Camps-Valls, S. Koirala, P. Anthoni, S. Besnard, P. Bodesheim, N. Carvalhais, F. Chevallier, F. Gans, D. S. Groll, V. Haverd, K. Ichii, A. K. Jain, J. Liu, D. Lombardozzi, J. E. M. S. Nabel, J. A. Nelson, M. Pallandt, D. Papale, W. Peters, J. Pongratz, C. Rödenbeck, S. Sitch, G. Tramontana, U. Weber, M. Reichstein, P. Koehler, M. O'Sullivan, and A. Walker. "Scaling carbon fluxes from eddy covariance sites to globe: synthesis and evaluation of the FLUXCOM approach". In: *Biogeosciences* 17.5 (2020), pp. 1343–1365. DOI: https://doi.org/10.5194/bg-17-1343-2020.

[164] G. Kraemer, G. Camps-Valls, M. Reichstein, and M. D. Mahecha. "Summarizing the state of the terrestrial biosphere in few dimensions". In: *Biogeosciences* 17.9 (2020), pp. 2397–2424. DOI: https://doi.org/10.5194/bg-17-2397-2020.

[165] G. Kraemer, G. Camps-Valls, M. Reichstein, J. Smits, and M. D. Mahecha. "Summarizing the state of the terrestrial biosphere in few dimensions". In: *Biogeosciences* (2020).

[166] G. Kraemer, M. Reichstein, G. Camps-Valls, J. Smits, and M. D. Mahecha. "The Low Dimensionality of Development". In: *Social Indicators Research* (2020).

[167] G. Kraemer, M. Reichstein, G. Camps-Valls, J. Smits, and M. D. Mahecha. "The low dimensionality of development". In: *Social Indicators Research* 150 (2020), pp. 999–1020. DOI: 10.1007/s11205-020-02349-0.

[168] V. Laparra, J. E. Johnson, G. Camps-Valls, R. Santos-Rodríguez, and J. Malo. "Information Theory Measures via Multidimensional Gaussianization". In: *IEEE Transactions on Pattern Analysis and Machine Intelligence* (2020). DOI: https://doi.org/10.48550/arXiv.2010.03807.

[169] M. D. Mahecha, F. Gans, G. Brandt, R. Christiansen, S. E. Cornell, N. Fomferra, G. Kraemer, J. Peters, P. Bodesheim, G. Camps-Valls, et al. "Earth system data cubes unravel global multivariate dynamics". In: *Earth System Dynamics* 11 (Feb. 2020), pp. 201–234. DOI: https://doi.org/10.5194/esd-11-201-2020.

[170] Moreno-Martínez, E. Izquierdo-Verdiguier, M. P. Maneta, G. Camps-Valls, N. Robinson, J. Muñoz-Marí, F. Sedano, N. Clinton, and S. W. Running. "Multispectral high resolution sensor fusion for smoothing and gap-filling in the cloud". In: *Remote Sensing of Environment* 247 (2020), p. 111901. ISSN: 0034-4257. DOI: 10.1016/j.rse.2020.111901.

[171] Á. Moreno-Martínez, M. Piles, J. Muñoz-Marí, M. Campos-Taberner, J. E. Adsuara, A. Mateo, A. Perez-Suay, F. Javier García-Haro, and G. Camps-Valls. "Machine Learning Methods for Spatial and Temporal Parameter Estimation". In: *Hyperspectral Image Analysis: Advances in Machine Learning and Signal Processing* (2020), pp. 5–35. DOI: https://doi.org/10.1007/978-3-030-38617-7_2. URL: https://link.springer.com/chapter/10.1007/978-3-030-38617-7_2.

[172] J. Padrón-Hidalgo, A. Pérez-Suay, F. Nar, V. Laparra, and G. Camps-Valls. "Efficient Kernel Cook's Distance for Remote Sensing Anomalous Change Detection". In: *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing* 13 (Sept. 2020), pp. 5480–5488. DOI: 10.1109/JSTARS.2020.3020913.

[173] G. Portal, T. Jagdhuber, M. Vall-Llossera, A. Camps, M. Pablos, D. Entekhabi, and M. Piles. "Assessment of multi-scale SMOS and SMAP soil moisture products across the Iberian Peninsula". In: *Remote Sensing* 12.3 (2020), p. 570. ISSN: 2072-4292. DOI: https://doi.org/10.3390/rs12030570.

[174] S. Salcedo-Sanz, P. Ghamisi, M. Piles, M. Werner, L. Cuadra, A Moreno-Martínez, E. Izquierdo-Verdiguier, J. Muñoz-Marí, A. Mosavi, and G. Camps-Valls. "Machine learning information fusion in Earth observation: A comprehensive review of methods, applications and data sources". In: *Information Fusion* 63 (2020), pp. 256–272. ISSN: 1566-2535. DOI: 10.1016/j.inffus.2020.07.004.

[175] R. Sauzède, J Johnson, H. Claustre, G Camps-Valls, and A Ruescas. "Estimation of oceanic particulate organic carbon with machine learning". In: *ISPRS Annals of Photogrammetry, Remote Sensing and Spatial Information Sciences* 2 (2020), pp. 949–956. DOI: 10.5194/isprs-annals-V-2-2020-949-2020.

[176] M. Schlund, V. Eyring, G. Camps-Valls, P. Friedlingstein, P. Gentine, and R. Reichstein. "Constraining uncertainty in projected gross primary production with machine learning". In: *Journal of Geophysical Research - Biogeosciences* (Oct. 2020). DOI: https://doi.org/10.1029/2019JG005619.

[177] D. H. Svendsen, P. Morales-Álvarez, A. B. Ruescas, R. Molina, and G. Camps-Valls. "Deep Gaussian processes for biogeophysical parameter retrieval and model inversion". In: *ISPRS Journal of Photogrammetry and Remote Sensing* 166 (2020), pp. 68–81. DOI: 10.1016/j.isprsjprs.2020.04.014.

[178] D. Svendsen, L. Martino, and G. Camps-Valls. "Active Emulation of Computer Codes with Gaussian Processes – Application to Remote Sensing". In: *Pattern Recognition* 100.107103 (2020), pp. 1–12. DOI: 10.1016/j.patcog.2019.107103.

[179] G. Tramontana, M. Migliavacca, M. Jung, M. Reichstein, T. Keenan, G. Camps-Valls, J. Ogee, J. Verrelst, and D. Papale. "Partitioning net carbon dioxide fluxes into photosynthesis and respiration using neural networks". In: *Global Change Biology* 26.9 (2020). DOI: https://doi.org/10.1111/gcb.15203.

[180] G. Tramontana, M. Migliavacca, M. Jung, M. Reichstein, T. F. Keenan, G. Camps-Valls, J. Ogee, J. Verrelst, and D. Papale. "Partitioning net carbon dioxide fluxes into photosynthesis and respiration using neural networks". In: *Global change biology* 26.9 (2020), pp. 5235–5253. DOI: 10.1111/gcb.15203.

[181] A. Wolanin, G. Mateo-García, G. Camps-Valls, L. Gómez-Chova, M. Meroni, G. Duveiller, Y. Liangzhi, and L. Guanter. "Estimating and Understanding Crop Yields with Explainable Deep Learning in the Indian Wheat Belt". In: *Environmental Research Letters* 15.2 (2020), pp. 1–12. DOI: https://doi.org/10.1088/1748-9326/ab68ac.

[182] A. Wolanin, G. Mateo-García, G. Camps-Valls, L. Gómez-Chova, M. Meroni, G. Duveiller, Y. Liangzhi, and L. Guanter. "Estimating and understanding crop yields with explainable deep learning in the Indian Wheat Belt". In: *Environmental research letters* 15.2 (2020), p. 024019. DOI: 10.1088/1748-9326/ab68ac.

[183] J. E. Adsuara, A. Pérez-Suay, J. Muñoz-Marí, A. Mateo-Sanchis, M. Piles, and G. Camps-Valls. "Nonlinear Distribution Regression for Remote Sensing Applications". In: *IEEE Transactions on Geoscience and Remote Sensing* 57.12 (2019), pp. 10025–10035. DOI: 10.1109/tgrs.2019.2931085.

[184] J. E. Adsuara, A. Pérez-Suay, J. Muñoz-Marí, A. Mateo-Sanchis, M. Piles, and G. Camps-Valls. "Nonlinear distribution regression for remote sensing applications". In: *IEEE Transactions on Geoscience and Remote Sensing* 57.12 (2019), pp. 10025–10035. DOI: 10.1109/TGRS.2019.2931085.

[185] G. Camps-Valls, D. Sejdinovic, J. Runge, and M. Reichstein. "A Perspective on Gaussian Processes for Earth Observation". In: *National Science Review* 6.4 (Mar. 2019), pp. 616–618. DOI: https://doi.org/10.1093/nsr/nwz028.

[186] D. Chaparro, G. Duveiller, M. Piles, A. Cescatti, M. Vall-Llossera, A. Camps, and D. Entekhabi. "Sensitivity of L-band vegetation optical depth to carbon stocks in tropical forests: a comparison to higher frequencies and optical indices". In: *Remote Sensing of Environment* 232 (2019), p. 111303. ISSN: 0034-4257. DOI: 10.1016/j.rse.2019.111303.

[187] J. García-Sobrino, V. Laparra, Serra-Sagristà, X. Calbet, and G. Camps-Valls. "Improved Statistically-based Retrievals via Spatial-Spectral Data Compression for IASI data". In: *IEEE Transactions on Geoscience and Remote Sensing* 99 (2019), pp. 1–12.

[188] J. Garcia-Sobrino, V. Laparra, J. Serra-Sagristà, X. Calbet, and G. Camps-Valls. "Improved statistically based retrievals via spatial-spectral data compression for IASI data". In: *IEEE Transactions on Geoscience and Remote Sensing* 57.8 (2019), pp. 5651–5668. DOI: 10.1109/TGRS.2019.2901396.

[189] M. Jung, S. Koirala, U. Weber, K. Ichii, F. Gans, G. Camps-Valls, D. Papale, C. Schwalm, G. Tramontana, and M. Reichstein. "The FLUXCOM ensemble of global land-atmosphere energy fluxes". In: *Scientific Data* (2019). DOI: 10.1038/s41597-019-0076-8.

[190] D. Malmgren-Hansen, V. Laparra, A. Nielsen, and G. Camps-Valls. "Statistical Retrieval of Atmospheric Profiles with Deep Convolutional Neural Networks". In: *ISPRS Journal of Photogrammetry and Remote Sensing* 1.1 (2019), pp. 1–1.

[191] D. Malmgren-Hansen, V. Laparra, A. A. Nielsen, and G. Camps-Valls. "Statistical retrieval of atmospheric profiles with deep convolutional neural networks". In: *ISPRS Journal of Photogrammetry and Remote Sensing* 158 (2019), pp. 231–240. DOI: 10.1016/j.isprsjprs.2019.10.002.

[192] J Marcello, M Piles, G Camps-Valls, C López-Martínez, J. álvarez Pérez, and A Plaza. "Activities of the IEEE GRSS Spain Chapter". In: *IEEE Geoscience and Remote Sensing Magazine* 7.2 (June 2019), pp. 177–180. ISSN: 2168-6831. DOI: 10.1109/MGRS.2019.2911368.

[193] A. Mateo-Sanchis, M. Piles, J. Muñoz-Marí, J. E. Adsuara, A. Pérez-Suay, and G. Camps-Valls. "Synergistic Integration of Optical and Microwave Satellite Data for Crop Yield Estimation". In: *Remote Sensing of Environment* 234 (Dec. 2019), p. 111460.

[194] A. Mateo-Sanchis, M. Piles, J. Muñoz-Marí, J. E. Adsuara, A. Pérez-Suay, and G. Camps-Valls. "Synergistic Integration of Optical and Microwave Satellite Data for Crop Yield Estimation". In: *Remote Sensing of Environment* 234 (Dec. 2019), p. 111460. DOI: 10.1016/j.rse.2019.111460.

[195] J. F. Moreno, J. A. Sobrino, and G. Camps-Valls. "Foreword to the Special Issue on IGARSS 2018". In: *IEEE J Sel. Topics in Appl. Earth Observ. and Remote Sensing* 12.7 (2019), pp. 2012–2014. DOI: 10.1109/JSTARS.2019.2929643.

[196] J. A. Padrón-Hidalgo, V. Laparra, N Longbotham, and G. Camps-Valls. "Kernel Anomalous Change Detection for Remote Sensing Imagery". In: *IEEE Transactions on Geoscience and Remote Sensing* 57.10 (2019), pp. 7743–7755. DOI: https://doi.org/https://ieeexplore.ieee.org/document/8732695.

[197] J. A. Padrón-Hidalgo, V. Laparra, N. Longbotham, and G. Camps-Valls. "Kernel anomalous change detection for remote sensing imagery". In: *IEEE Transactions on Geoscience and Remote Sensing* 57.10 (2019), pp. 7743–7755. DOI: 10.1109/TGRS.2019.2916212.

[198] A. Pérez-Suay and G. Camps-Valls. "Causal Inference in Geoscience and Remote Sensing from Observational Data". In: *IEEE Transactions on Geoscience and Remote Sensing* 57.3 (2019), pp. 1502–1513. DOI: https://ieeexplore.ieee.org/document/8475013.

[199] L. Pipia, J. Muñoz-Marí, E. Amin, S. Belda, G. Camps-Valls, and J. Verrelst. "Fusing Optical and SAR time series for LAI gap filling with multioutput Gaussian processes". In: *Remote Sensing of Environment* 235 (Dec. 2019), p. 111452. DOI: 10.1016/j.rse.2019.111452.

[200] M. Reichstein, G. Camps-Valls, B. Stevens, J. Denzler, N. Carvalhais, M. Jung, and Prabhat. "Deep learning and process understanding for data-driven Earth System Science". In: *Nature* 566 (Feb. 2019), pp. 195–204. DOI: https://doi.org/10.1038/s41586-019-0912-1.

[201] M. Reichstein, G. Camps-Valls, B. Stevens, M. Jung, J. Denzler, N. Carvalhais, and F Prabhat. "Deep learning and process understanding for data-driven Earth system science". In: *Nature* 566.7743 (Feb. 2019), pp. 195–204. DOI: 10.1038/s41586-019-0912-1.

[202] J. Runge, S. Bathiany, E. Bollt, G. Camps-Valls, D. Coumou, E. Deyle, C. Clymour, M. Kretschmer, M. Mahecha, J. Muñoz-Marí, E. van Nes, J. Peters, R. Quax, M. Reichstein, M. Scheffer, B. Schölkopf, P. Spirtes, G. Sugihara, J. Sun, K. Zhang, and J. Zscheischler. "Inferring causation from time series with perspectives in Earth system sciences". In: *Nature Communications* 2553 (2019), pp. 1–13. DOI: https://doi.org/10.1038/s41467-019-10105-3.

[203] J. Runge, S. Bathiany, E. Bollt, G. Camps-Valls, D. Coumou, E. Deyle, C. Glymour, M. Kretschmer, M. D. Mahecha, J. Muñoz-Marí, et al. "Inferring causation from time series in Earth system sciences". In: *Nature communications* 10.2553 (2019), pp. 1–13. DOI: 10.1038/s41467-019-10105-3.

[204] I. E. Teubner, M. Forkel, G. Camps-Valls, M. Jung, D. G. Miralles, G. Tramontana, R. van der Schalie, M. Vreugdenhil, L. Mösinger, and W. A. Dorigo. "A carbon sink-driven approach to estimate gross primary production from microwave satellite observations". In: *Remote Sensing of Environment* 229 (Aug. 2019), pp. 100–113.

[205] I. E. Teubner, M. Forkel, G. Camps-Valls, M. Jung, D. G. Miralles, G. Tramontana, R. Van der Schalie, M. Vreugdenhil, L. Mösinger, and W. A. Dorigo. "A carbon sink-driven approach to estimate gross primary production from microwave satellite observations". In: *Remote Sensing of Environment* 229 (Aug. 2019), pp. 100–113. DOI: 10.1016/j.rse.2019.04.022.

[206] J. Vicent, L. Alonso, L. Martino, N. Sabater, J. Verrelst, G. Camps-Valls, and J. Moreno. "Gradient-based Automatic Look-Up Table Generator for Radiative Transfer Models". In: *IEEE Transactions on Geoscience and Remote Sensing* 57.2 (2019), pp. 1040–1048. DOI: 10.1109/tgrs.2018.2864517.

[207] S. Walther, G. Duveiller, M. Jung, L. Guanter, A. Cescatti, and G. Camps-Valls. "Satellite observations of the contrasting response of trees and grasses to variations in water availability". In: *Geophysical Research Letters* 46.46 (2019). DOI: https://doi.org/10.1029/2018GL080535.

[208] S. Walther, G. Duveiller, M. Jung, L. Guanter, A. Cescatti, and G. Camps-Valls. "Satellite observations of the contrasting response of trees and grasses to variations in water availability". In: *Geophysical Research Letters* 46.3 (2019), pp. 1429–1440. DOI: 10.1029/2018gl080535.

[209] A. Wolanin, L. Guanter, G. Camps-Valls, L. Gómez-Chova, G. Mateo-García, C. van der Tol, and Y. Zhang. "Estimating Crop Gross Primary Productivity with Sentinel-2, Radiative Transfer Modeling and Machine Learning Methods". In: *Remote Sensing of Environment* (2019).

[210] A. Wolanin, G. Camps-Valls, L. Gómez-Chova, G. Mateo-García, C. van der Tol, Y. Zhang, and L. Guanter. "Estimating crop primary productivity with Sentinel-2 and Landsat 8 using machine learning methods trained with radiative transfer simulations". In: *Remote sensing of environment* 225 (2019), pp. 441–457. DOI: 10.1016/j.rse.2019.03.002.

[211] M. Campos-Taberner, F. J. García-Haro, L. Busetto, L. Ranghetti, B. Martínez, M. Gilabert, G. Camps-Valls, F. Camacho, and M. Boschetti. "A critical comparison of remote sensing leaf area index estimates over rice cultivated area: from Sentinel-2 and Landsat-7/8 to MODIS, GEOV1 and EUMETSAT Polar System". In: 10.5 (2018). DOI: https://doi.org/10.3390/rs10050763.

[212] M. Campos-Taberner, A. Moreno-Martínez, F. J. García-Haro, G. Camps-Valls, N. P. Robinson, J. Kattge, and S. Running. "Global estimation of biophysical variables from Google Earth Engine platform". In: *Remote Sensing* 10 (2018), p. 1167. DOI: https://doi.org/10.3390/rs10081167.

[213] M. Campos-Taberner, F. J. García-Haro, L. Busetto, L. Ranghetti, B. Martínez, M. A. Gilabert, G. Camps-Valls, F. Camacho, and M. Boschetti. "A critical comparison of remote sensing Leaf Area Index estimates over rice-cultivated areas: From Sentinel-2 and Landsat-7/8 to MODIS, GEOV1 and EUMETSAT polar system". In: *Remote Sensing* 10.5 (2018), p. 763. DOI: https://doi.org/10.3390/rs10050763.

[214] M. Campos-Taberner, Moreno-Martínez, F. J. García-Haro, G. Camps-Valls, N. P. Robinson, J. Kattge, and S. W. Running. "Global estimation of biophysical variables from Google Earth Engine platform". In: *Remote Sensing* 10.8 (2018), p. 1167. DOI: https://doi.org/10.3390/rs10081167.

[215] G. Camps-Valls, L. Martino, D. H. Svendsen, M. Campos-Taberner, J. Muñoz-Marí, V. Laparra, D. Luengo, and F. J. García-Haro. "Physics-aware Gaussian processes in remote sensing". In: *Applied Soft Computing* 68 (July 2018), pp. 69–82. DOI: https://doi.org/10.1016/j.asoc.2018.03.021.

[216] G. Camps-Valls, D. Svendsen, L. Martino, J. Muñoz-Marí, V. Laparra, M. Campos-Taberner, and D. Luengo. "Physics-aware Gaussian processes in remote sensing". In: *Applied Soft Computing* 68 (July 2018), pp. 69–82. DOI: https://doi.org/10.1016/j.asoc.2018.03.021.

[217] D. Chaparro, M. Piles, M. Vall-Llossera, A. Camps, A. G. Konings, and D. Entekhabi. "L-band vegetation optical depth seasonal metrics for crop yield assessment". In: *Remote Sensing of Environment* 212 (2018), pp. 249–259. ISSN: 0034-4257. DOI: 10.1016/j.rse.2018.04.049.

[218] L. Gómez-Chova, R. Santos-Rodríguez, and G. Camps-Valls. "Signal-to-Noise Ratio in reproducing kernel Hilbert spaces". In: *Pattern Recognition Letters* 112 (Sept. 2018), pp. 75–82. DOI: https://doi.org/10.1016/j.patrec.2018.06.004.

[219] F. J. García-Haro, M. Campos-Taberner, J. Muñoz-Marí, V. Laparra, F. Camacho, J. Sanchez-Zapero, and G. Camps-Valls. "Derivation of global vegetation biophysical parameters from EUMETSAT Polar System". In: *ISPRS Journal of Photogrammetry and Remote Sensing* 139 (2018), pp. 57–74. ISSN: 0924-2716. DOI: 10.1016/j.isprsjprs.2018.03.005.

[220] L. Gómez-Chova, R. Santos-Rodríguez, and G. Camps-Valls. "Signal-to-noise ratio in reproducing kernel Hilbert spaces". In: *Pattern Recognition Letters* 112 (Sept. 2018), pp. 75–82. DOI: https://doi.org/10.1016/j.patrec.2018.06.004.

[221] L. Martino, V. Elvira, and G. Camps-Valls. "The Recycling Gibbs sampler for efficient learning". In: *Digital Signal Processing* 74 (2018), pp. 1–13. DOI: https://doi.org/10.1016/j.dsp.2017.11.012.

[222] L. Martino, V. Elvira, and G. Camps-Valls. "Group Importance Sampling for Particle Filtering and MCMC". In: *Digital Signal Processing* 82.1 (2018), pp. 133–151. DOI: 10.1016/j.dsp.2018.07.007.

[223] L. Martino, V. Elvira, and G. Camps-Valls. "The Recycling Gibbs sampler for efficient learning". In: *Digital Signal Processing* 74 (2018), pp. 1–13. ISSN: 1051-2004. DOI: 10.1016/j.dsp.2017.11.012.

[224] G. Mateo-García, L. Gómez-Chova, J. Amorós-López, J. Muñoz Marí, and G. Camps-Valls. "Multitemporal Cloud Masking in the Google Earth Engine". en. In: *Remote Sensing* 10.7 (July 2018), p. 1079. DOI: https://doi.org/10.3390/rs10071079. (Visited on 07/10/2018).

[225] A. Mateo-Sanchis, J. Muñoz-Marí, A. Pérez-Suay, and G. Camps-Valls. "Warped Gaussian processes in remote sensing parameter estimation and causal inference". In: *IEEE Geoscience and Remote Sensing Letters* 15.11 (2018), pp. 1647–1651. DOI: 10.1109/LGRS.2018.2853760.

[226] A. Mateo, J. Muñoz-Marí, A. Pérez-Suay, and G. Camps-Valls. "Warped Gaussian Processes in Remote Sensing Parameter Estimation and Causal Inference". In: *IEEE Geoscience and Remote Sensing Letters* 15.11 (2018), pp. 1647–1651. DOI: https://doi.org/https://ieeexplore.ieee.org/document/8418460.

[227] P. Morales-Alvarez, A. Pérez-Suay, R. Molina, and G. Camps-Valls. "Remote Sensing Image Classification With Large-Scale Gaussian Processes". In: *IEEE Transactions on Geoscience and Remote Sensing* 56.2 (Feb. 2018), pp. 1103–1114. ISSN: 0196-2892. DOI: 10.1109/TGRS.2017.2758922.

[228] A. Moreno-Martínez, G. Camps-Valls, J. Kattge, N. Robinson, M. Reichstein, P. van Bodegom, K. Kramer, J. Cornelissen, P. Reich, M. Bahn, U. Niinemets, J. Penuelas, J. Craine, B. Cerabolini, V. Minden, D. Laughlin, L. Sack, B. Allred, C. Baraloto, C. Byun, N. Soudzilovskaia, and S. Running. "A methodology to derive global maps of leaf traits using remote sensing and climate data". In: *Remote Sensing of Environment* 218.12 (2018), pp. 69–88. DOI: https://doi.org/10.1016/j.rse.2018.09.006.

[229] Moreno-Martínez, G. Camps-Valls, J. Kattge, N. Robinson, M. Reichstein, P. van Bodegom, K. Kramer, J. H. C. Cornelissen, P. Reich, M. Bahn, et al. "A methodology to derive global maps of leaf traits using remote sensing and climate data". In: *Remote sensing of environment* 218.12 (2018), pp. 69–88. DOI: 10.1016/j.rse.2018.09.006.

[230] A. Pérez-Suay, J. Amorós, L. Gómez-Chova, V. Laparra, J. Muñoz-Marí, and G. Camps-Valls. "Pattern Recognition Scheme for Large-Scale Cloud Detection over Landmarks". In: *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing* 11.11 (2018), pp. 3977–3987. DOI: https://doi.org/10.1109/JSTARS.2018.2863383.

[231] A. Pérez-Suay, J. Amorós-López, L. Gómez-Chova, J. Muñoz-Marí, D. Just, and G. Camps-Valls. "Pattern recognition scheme for large-scale cloud detection over landmarks". In: *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing* 11.11 (2018), pp. 3977–3987. DOI: 10.1109/JSTARS.2018.2863383.

[232] A. Pérez-Suay and G. Camps-Valls. "Causal inference in geoscience and remote sensing from observational data". In: *IEEE Transactions on Geoscience and Remote Sensing* 57.3 (2018), pp. 1502–1513. DOI: 10.1109/TGRS.2018.2867002.

[233] G. Portal, M. Vall-Llossera, M. Piles, A. Camps, D. Chaparro, M. Pablos, and L. Rossato. "A spatially consistent downscaling approach for SMOS using an adaptive moving window". In: *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing* 11.6 (2018), pp. 1883–1894. DOI: 10.1109/JSTARS.2018.2832447.

[234] A. B. Ruescas, M. Hieronymi, G. Mateo-García, S. Koponen, K. Kallio, and G. Camps-Valls. "Machine Learning Regression Approaches for Colored Dissolved Organic Matter (CDOM) Retrieval with S2-MSI and S3-OLCI Simulated Data". In: *Remote Sensing* 10.5 (2018). ISSN: 2072-4292. DOI: https://doi.org/10.3390/rs10050786.

[235] I. E. Teubner, M. Forkel, M. Jung, Y. Y. Liu, D. G. Miralles, R. Parinussa, R. van der Schalie, M. Vreugdenhil, C. R. Schwalm, G. Tramontana, G. Camps-Valls, and W. A. Dorigo. "Assessing the relationship between microwave vegetation optical depth and gross primary production". In: *International Journal of Applied Earth Observation and Geoinformation* 65 (2018), pp. 79–91. ISSN: 0303-2434. DOI: 10.1016/j.jag.2017.10.006.

[236] I. E. Teubner, M. Forkel, M. Jung, Y. Y. Liu, D. G. Miralles, R. Parinussa, R. van der Schalie, M. Vreugdenhil, C. R. Schwalm, G. Tramontana, G. Camps-Valls, and W. A. Dorigo. "Assessing the relationship between microwave vegetation optical depth and gross primary production". In: *International Journal of Applied Earth Observation and Geoinformation* 65 (2018), pp. 79–91. DOI: https://doi.org/10.1016/j.jag.2017.10.006.

[237] J. Verrelst, Z. Malenovsky, C. Van der Tol, G. Camps-Valls, J.-P. Gastellu-Etchegorry, P. Lewis, P. North, and J. Moreno. "Quantifying Vegetation Biophysical Variables from Imaging Spectroscopy Data: A Review on Retrieval Methods". In: *Surveys in Geophysics* 40 (June 2018), pp. 589–629. ISSN: 1573-0956. DOI: 10.1007/s10712-018-9478-y.

[238] J. Vicent, J. Verrelst, J. Rivera-Caicedo, N. Sabater, J. Muñoz Marí, G. Camps-Valls, and J. Moreno. "Emulation as an Accurate Alternative to Interpolation in Sampling Radiative Transfer Codes". In: *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing* 11.12 (Dec. 2018), pp. 4918–4931. DOI: 10.1109/JSTARS.2018.2875330.

[239] J. Vicent, J. Verrelst, J. Rivera-Caicedo, N. Sabater, J. Muñoz-Marí, G. Camps-Valls, and J. Moreno. "Emulation as an Accurate Alternative to Interpolation in Sampling Radiative Transfer Codes". In: *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing* 11.12 (Dec. 2018), pp. 4918–4931. DOI: 10.1109/jstars.2018.2875330.

[240] A. Bailly, L. Chapel, R. Tavenard, and G. Camps-Valls. "Nonlinear Time-Series Adaptation for Land Cover Classification". In: *IEEE Geoscience and Remote Sensing Letters* Pp.99 (2017), pp. 1–5. DOI: http://dx.doi.org/doi:10.1109/LGRS.2017.2686639.

[241] A. Bailly, L. Chapel, R. Tavenard, and G. Camps-Valls. "Nonlinear Time-Series Adaptation for Land Cover Classification". In: *IEEE Geoscience and Remote Sensing Letters* Pp.99 (2017), pp. 1–5. ISSN: 1545-598x. DOI: 10.1109/LGRS.2017.2686639.

[242] K. Blix, R. Jenssen, and G. Camps-Valls. "Gaussian Process Sensitivity Analysis for Oceanic Chlorophyll Estimation". In: *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing* 1.1 (2017), pp. 1–13. DOI: http://dx.doi.org/10.1109/JSTARS.2016.2641583.

[243] K. Blix, G. Camps-Valls, and R. Jenssen. "Gaussian process sensitivity analysis for oceanic chlorophyll estimation". In: *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing* 10.4 (2017), pp. 1265–1277. DOI: 10.1109/JSTARS.2016.2641583.

[244] J Borràs, J. Delegido, A Pezzola, M Pereira, G Morassi, and G Camps-Valls. "Clasificación de usos del suelo a partir de imágenes Sentinel-2". In: *Revista de Teledetección* 48 (2017), pp. 55–66. DOI: https://doi.org/10.4995/raet.2017.7133.

[245] M. Campos-Taberner, F. J. García-Haro, and G. Camps-Valls. "Development of an Earth observation processing chain for crop biophysical parameters at local and global scale". In: *Revista de Teledeteccion* 50 (2017), pp. 101–104. DOI: https://doi.org/10.4995/raet.2017.7902.

[246] G. Camps-Valls, T. Hickler, and B. König-Ries. "Computer Science Meets Ecology (Dagstuhl Seminar 17091)". In: *Dagstuhl Reports* 7.2 (2017). Ed. by G. Camps-Valls, T. Hickler, and B. König-Ries, pp. 109–134. ISSN: 2192-5283. DOI: https://doi.org/10.4230/DagRep.7.2.109.

[247] D. Chaparro, J. Vayreda, M. Vall-llossera, M. Banqué, M. Piles, A. Camps, and J. Martínez-Vilalta. "The Role of Climatic Anomalies and Soil Moisture in the Decline of Drought-Prone Forests". In: *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing* 10.2 (2017), pp. 503–514. DOI: 10.1109/JSTARS.2016.2585505.

[248] J. García Sobrino, Serra-Sagrista, V. Laparra, X. Calbet, and G. Camps-Valls. "Statistical Atmospheric Parameter Retrieval Largely Benefits from Spatial-Spectral Image Compression". In: *IEEE Transactions on Geoscience and Remote Sensing* 55.4 (2017), pp. 2213–2224. DOI: 10.1109/TGRS.2016.2639099.

[249] L. Gómez-Chova, J. Amoros-López, G. Mateo-García, J. Muñoz Marí, and G. Camps-Valls. "Cloud masking and removal in remote sensing image time series". In: *Journal of Applied Remote Sensing* 11.1 (2017), p. 015005. DOI: https://doi.org/10.1117/1.JRS.11.015005.

[250] E. Izquierdo-Verdiguier, V. Laparra, R. Jenssen, L. Gómez-Chova, and G. Camps-Valls. "Optimized Kernel Entropy Components". In: *IEEE transactions on neural networks and learning systems* 28.6 (June 2017), pp. 1466–1472. ISSN: 2162-237x. DOI: 10.1109/TNNLS.2016.2530403.

[251] M. Jung, M. Reichstein, C. R. Schwalm, C. Huntingford, S. Sitch, A. Ahlström, A. Arneth, G. Camps-Valls, P. Ciais, P. Friedlingstein, F. Gans, K. Ichii, A. K. Jain, E. Kato, D. Papale, B. Poulter, B. Raduly, C. Rödenbeck, G. Tramontana, N. Viovy, Y.-P. Wang, U. Weber, S. Zaehle, and N. Zeng. "Compensatory water effects link yearly global land CO2 sink changes to temperature". In: *Nature* 541.7638 (Jan. 2017), pp. 516–520. DOI: 10.1038/nature20780.

[252] S. Koirala, M. Jung, M. Reichstein, I. E. M. de Graaf, G. Camps-Valls, K. Ichii, D. Papale, B. Reduly, C. R. Schwalm, G. Tramontana, and N. Carvalhais. "Global distribution of groundwater-vegetation spatial covariation". In: *Geophysical Research Letters* (2017). 2017gl072885, n/a–n/a. ISSN: 1944-8007. DOI: 10.1002/2017gl072885.

[253] S. Koirala, M. Jung, M. Reichstein, I. E. M. de Graaf, G. Camps-Valls, K. Ichii, D. Papale, B. Reduly, C. R. Schwalm, G. Tramontana, and N. Carvalhais. "Global distribution of groundwater-vegetation spatial covariation". In: *Geophysical Research Letters* (2017). 2017gl072885, n/a–n/a. DOI: https://doi.org/10.1002/2017GL072885.

[254] M. Manuel Campos-Taberner, F. García-Haro, G. Camps-Valls, G. Grau-Muedra, F. Nutini, L. Busetto, D. Katsantonis, D. Stavrakoudis, C. Minakou, L. Gatti, M. Barbieri, F. Holecz, D. Stroppiana, and M. Boschetti. "Exploitation of SAR and optical Sentinel data to detect rice crop and estimate seasonal dynamics of leaf area index". In: *Remote Sensing* 9.3 (2017), p. 248. DOI: https://doi.org/10.3390/rs9030248.

[255] J. Muñoz-Mar'i, E. Izquierdo-Verdiguier, M. Campos-Taberner, A. P'erez-Suay, L. G'omez-Chova, G. Mateo-Garc'ia, A. B. Ruescas, V. Laparra, J. A. Padr'on, J. Amor'os, and G. Camps-Valls. "HyperLabelMe: a Web Platform for Benchmarking Remote Sensing Image Classifiers". In: *IEEE Geoscience and Remote Sensing Magazine* 5.4 (2017), pp. 79–85. DOI: 10.1109/MGRS.2017.2762476.

[256] A. Pérez-Suay and G. Camps-Valls. "Sensitivity maps of the Hilbert–Schmidt independence criterion". In: *Applied Soft Computing* (2017). DOI: https://doi.org/10.1016/j.asoc.2017.04.024.

[257] A. Pérez-Suay, J. Amorós-López, L. Gómez-Chova, V. Laparra, J. Muñoz-Marí, and G. Camps-Valls. "Randomized kernels for large scale Earth observation applications". In: *Remote Sensing of Environment* (2017), pp. –. ISSN: 0034-4257. DOI: 10.1016/j.rse.2017.02.009.

[258] A. Pérez-Suay and G. Camps-Valls. "Sensitivity maps of the Hilbert–Schmidt independence criterion". In: *Applied Soft Computing* 70 (2017), pp. 1054–1063. ISSN: 1568-4946. DOI: https://doi.org/10.1016/j.asoc.2017.04.024.

[259] J. P. Rivera-Caicedo, J. Verrelst, J. Muñoz-Marí, G. Camps-Valls, and J. Moreno. "Hyperspectral dimensionality reduction for biophysical variable statistical retrieval". In: *ISPRS Journal of Photogrammetry and Remote Sensing* 132 (2017), pp. 88–101. ISSN: 0924-2716. DOI: https://doi.org/10.1016/j.isprsjprs.2017.08.012.

[260] D. H. Svendsen, L. Martino, M. Campos-Taberner, F. J. García-Haro, and G. Camps-Valls. "Joint Gaussian Processes for Biophysical Parameter Retrieval". In: *IEEE Transactions on Geoscience and Remote Sensing* 56.3 (Mar. 2017), pp. 1718–1727. ISSN: 0196-2892. DOI: 10.1109/TGRS.2017.2767205.

[261] J. Verrelst, J. P. Rivera Caicedo, J. Muñoz Marí, G. Camps-Valls, and J. Moreno. "SCOPE-Based Emulators for Fast Generation of Synthetic Canopy Reflectance and Sun-Induced Fluorescence Spectra". In: *Remote Sensing* 9.9 (2017). ISSN: 2072-4292. DOI: https://doi.org/10.3390/rs9090927.

[262] M. Campos-Taberner, A. Romero-Soriano, C. Gatta, G. Camps-Valls, A. Lagrange, B. Le Saux, O. TEAM, M. Shimoni, G. Moser, and D. Tuia. "Processing of Extremely high resolution LiDAR and optical data: Outcome of the 2015 IEEE GRSS Data Fusion Contest. Part A: 2D contest". In: *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing* 9.7 (2016). DOI: 10.1109/JSTARS.2016.2569162.

[263] M. Campos-Taberner, F. J. García-Haro, G. Camps-Valls, G. Grau-Muedra, F. Nutini, A. Crema, and M. Boschetti. "Multitemporal and multiresolution leaf area index retrieval for operational local rice crop monitoring". In: *Remote Sensing of Environment* 187 (2016), pp. 102–118. ISSN: 0034-4257. DOI: 10.1016/j.rse.2016.10.009.

[264] A. J. Camps Carmona, C. Gabarró Prats, M. M. Vall-Llossera Ferran, S. Blanch Boris, A. Aguasca Solé, F. Torres Torres, I. Corbella Sanahuja, N. Duffo Ubeda, A. Turiel, M. Portabella, et al. "From experimental campaigns to BEC-CP34 salinity products: Tribute to the Contributions of prof. Font to the SMOS Mission". In: *Scientia marina* 80 (2016), pp. 159–172. DOI: 10.3989/scimar.04285.04a.

[265] G. Camps-Valls. "Kernel spectral angle mapper". In: *IEE Electronics Letters* 52.14 (June 2016), pp. 1218–1220. ISSN: 1350-911x. DOI: https://doi.org/10.1049/el.2016.0661.

[266] G. Camps-Valls, J. Verrelst, J. Muñoz Marí, V. Laparra, F. Mateo-Jiménez, and J. Gómez-Dans. "A Survey on Gaussian Processes for Earth Observation Data Analysis: A Comprehensive Investigation". In: *IEEE Geoscience and Remote Sensing Magazine* 4.2 (June 2016). DOI: 10.1109/MGRS.2015.2510084.

[267] G. Camps-Valls, J. Bioucas-Dias, and M. Crawford. "Advances in Machine Learning for Remote Sensing and Geosciences". In: *IEEE Geoscience and Remote Sensing Magazine* 6 (June 2016). DOI: http://dx.doi.org/10.1109/MGRS.2016.2548646.

[268] G. Camps-Valls, J. Bioucas-Dias, and M. Crawford. "A Special Issue on Advances in Machine Learning for Remote Sensing and Geosciences [From the Guest Editors]". In: *IEEE Geoscience and Remote Sensing Magazine* 4.2 (2016), pp. 5–7. DOI: 10.1109/MGRS.2016.2548646.

[269] D. Chaparro, M. Vall-llossera, M. Piles, A. Camps, C. Rüdiger, and R. Riera-Tatché. "Predicting the Extent of Wildfires Using Remotely Sensed Soil Moisture and Temperature Trends". In: *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing* 9.6 (2016), pp. 2818–2829. DOI: 10.1109/JSTARS.2016.2571838.

[270] D. Chaparro, M. Piles, M. Vall-Llossera, and A. Camps. "Surface moisture and temperature trends anticipate drought conditions linked to wildfire activity in the Iberian Peninsula". In: *European Journal of Remote Sensing* 49.1 (2016), pp. 955–971. DOI: 10.5721/eujrs20164950.

[271] E. Izquierdo-Verdiguier, V. Laparra, R. Jenssen, L. Gómez-Chova, and G. Camps-Valls. "Optimized Kernel Entropy Components". In: *IEEE Transactions on Neural Networks and Learning Systems* 6 (2016), pp. 1466–1472. DOI: http://dx.doi.org/10.1109/TNNLS.2016.2530403.

[272] M. Pablos, J. Martínez-Fernández, M. Piles, N. Sánchez, M. Vall-llossera, and A. Camps. "Multi-Temporal Evaluation of Soil Moisture and Land Surface Temperature Dynamics Using in Situ and Satellite Observations". In: *Remote Sensing* 8.7 (2016). ISSN: 2072-4292. DOI: https://doi.org/10.3390/rs8070587.

[273] M. Pablos, M. Piles, N. Sánchez, M. Vall-llossera, J. Martínez-Fernández, and A. Camps. "Impact of day/night time land surface temperature in soil moisture disaggregation algorithms". In: *European Journal of Remote Sensing* 49.1 (2016), pp. 899–916. DOI: 10.5721/eujrs20164947.

[274] A. Romero, C. Gatta, and G. Camps-Valls. "Unsupervised Deep Feature Extraction for Remote Sensing Image Classification". In: *Geoscience and Remote Sensing, IEEE Transactions on* 54.3 (2016), pp. 1349–1362. ISSN: 0196-2892. DOI: 10.1109/TGRS.2015.2478379.

[275] G. Tramontana, M. Jung, G. Camps-Valls, K. Ichii, B. Raduly, M. Reichstein, C. R. Schwalm, M. A. Arain, A. Cescatti, G. Kiely, L. Merbold, P. Serrano-Ortiz, S. Sickert, S. Wolf, and D. Papale. "Predicting carbon dioxide and energy fluxes across global FLUXNET sites with regression algorithms". In: *Biogeosciences Discussions* 2016 (2016), pp. 1–33. DOI: http://dx.doi.org/10.5194/bg-2015-661.

[276] G. Tramontana, M. Jung, C. R. Schwalm, K. Ichii, G. Camps-Valls, B. Ráduly, M. Reichstein, M. A. Arain, A. Cescatti, G. Kiely, et al. "Predicting carbon dioxide and energy fluxes across global FLUXNET sites with regression algorithms". In: *Biogeosciences* 13.14 (2016), pp. 4291–4313. DOI: https://doi.org/10.5194/bg-13-4291-2016.

[277] D. Tuia and G. Camps-Valls. "Kernel Manifold Alignment for Domain Adaptation". In: *PLoS ONE* 6 (2016). DOI: http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0148655.

[278] D. Tuia and G. Camps-Valls. "Kernel manifold alignment for domain adaptation". In: *PloS one* 11.2 (2016), e0148655. DOI: 10.1371/journal.pone.0148655.

[279] D. Tuia, D. Marcos, and G. Camps-Valls. "Multi-temporal and multi-source remote sensing image classification by nonlinear relative normalization". In: *ISPRS Journal of Photogrammetry and Remote Sensing* 120 (2016), pp. 1–12. ISSN: 0924-2716. DOI: 10.1016/j.isprsjprs.2016.07.004.

[280] J. Verrelst, S. Dethier, J. Rivera, J. Muñoz-Marí, G. Camps-Valls, and J. Moreno. "Active learning methods for efficient hybrid biophysical variable retrieval". In: *IEEE Geoscience and Remote Sensing Letters* 13.7 (2016), pp. 1012–1016. DOI: http://dx.doi.org/10.1109/LGRS.2016.2560799.

[281] J. Verrelst, J. P. Rivera, A. Gitelson, J. Delegido, J. Moreno, and G. Camps-Valls. "Spectral band selection for vegetation properties retrieval using Gaussian processes regression". In: *International Journal of Applied Earth Observation and Geoinformation* 52 (2016), pp. 554–567. DOI: 10.1016/j.jag.2016.07.016.

[282] J. Verrelst, J. P. Rivera, A. Gitelson, J. M. Jesús Delegido, and G. Camps-Valls. "Spectral Band Selection for Vegetation Properties Retrieval using Gaussian Processes Regression". In: *International Journal of Applied Earth Observation and Geoinformation* 52 (2016), pp. 554–567. DOI: http://dx.doi.org/10.1016/j.jag.2016.07.016.

[283] J. Verrelst, N. Sabater, J. P. Rivera, J. Muñoz Marí, J. Vicent, G. Camps-Valls, and J. Moreno. "Emulation of Leaf, Canopy and Atmosphere Radiative Transfer Models for Fast Global Sensitivity Analysis". In: *Remote Sensing* 8.8 (2016), p. 673. ISSN: 2072-4292. DOI: https://doi.org/10.3390/rs8080673.

[284] M. Campos-Taberner, F. García-Haro, Moreno, M. Gilabert, S. Sánchez-Ruiz, B. Martínez, and G. Camps-Valls. "Mapping Leaf Area Index With a Smartphone and Gaussian Processes". In: *IEEE Geoscience and Remote Sensing Letters* 12.12 (2015), pp. 2501–2505. DOI: 10.1109/LGRS.2015.2488682.

[285] L. Gómez-Chova, D. Tuia, G. Moser, and G. Camps-Valls. "Multimodal Classification of Remote Sensing Images: A Review and Future Directions". In: *Proceedings of the IEEE* 103.9 (2015), pp. 1560–1584. DOI: 10.1109/JPROC.2015.2449668.

[286] E. Izquierdo-Verdiguier, R. Jenssen, L. Gómez-Chova, and G. Camps-Valls. "Spectral clustering with the probabilistic cluster kernel". In: *Neurocomputing* 149, Part C (2015), pp. 1299–1304. ISSN: 0925-2312. DOI: https://doi.org/10.1016/j.neucom.2014.08.068.

[287] V. Laparra, J. Malo, and G. Camps-Valls. "Dimensionality reduction via regression in hyperspectral imagery". In: *IEEE Journal on Selected Topics in Signal Processing* 9.6 (2015), pp. 1026–1036. DOI: 10.1109/JSTSP.2015.2417833.

[288] M. Pablos, M. Piles, V. González-Gambau, A. Camps, and M. Vall-llossera. "Ice thickness effects on Aquarius brightness temperatures over Antarctica". In: *Journal of Geophysical Research: Oceans* 120.4 (2015), pp. 2856–2868. DOI: 10.1002/2014jc010151.

[289] J. Rivera, J. Verrelst, J. Gómez-Dans, J. Muñoz Marí, J. Moreno, and G. Camps-Valls. "An emulator toolbox to approximate radiative transfer models with statistical learning". In: *Remote Sensing* 7.7 (2015), pp. 9347–9370. DOI: https://doi.org/10.3390/rs70709347.

[290] N. Sánchez, A. Alonso-Arroyo, J. Martínez-Fernández, M. Piles, González-Zamora, A. Camps, and M. Vall-llosera. "On the Synergy of Airborne GNSS-R and Landsat 8 for Soil Moisture Estimation". In: *Remote Sensing* 7.8 (2015), pp. 9954–9974. ISSN: 2072-4292. DOI: https://doi.org/10.3390/rs70809954.

[291] G. Tramontana, K. Ichii, G. Camps-Valls, E. Tomelleri, and D. Papale. "Uncertainty analysis of gross primary production upscaling using Random Forests, remote sensing and eddy covariance data". In: *Remote Sensing of Environment* 168 (2015), pp. 360–373. DOI: https://doi.org/10.1016/j.rse.2015.07.015.

[292] J. Verrelst, J. Rivera, F. Veroustraete, J. Muñoz Marí, J. Clevers, G. Camps-Valls, and J. Moreno. "Experimental Sentinel-2 LAI estimation using parametric, non-parametric and physical retrieval methods-A comparison". In: *ISPRS Journal of Photogrammetry and Remote Sensing* 108 (2015), pp. 260–272. DOI: 10.1016/j.isprsjprs.2015.04.013.

[293] J. Verrelst, G. Camps-Valls, J. Muñoz-Marí, J. P. Rivera, F. Veroustraete, J. G. Clevers, and J. Moreno. "Optical remote sensing and the retrieval of terrestrial vegetation bio-geophysical properties – A review". In: *ISPRS Journal of Photogrammetry and Remote Sensing* 108 (2015), pp. 273–290. ISSN: 0924-2716. DOI: 10.1016/j.isprsjprs.2015.05.005.

[294] M. Volpi, G. Camps-Valls, and D. Tuia. "Spectral alignment of multi-temporal cross-sensor images with automated kernel canonical correlation analysis". In: *ISPRS Journal of Photogrammetry and Remote Sensing* 107 (2015), pp. 50–63. DOI: https://doi.org/10.1016/j.isprsjprs.2015.02.005.

[295] J. Caicedo, J. Verrelst, J. Muñoz Marí, J. Moreno, and G. Camps-Valls. "Toward a semiautomatic machine learning retrieval of biophysical parameters". In: *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing* 7.4 (2014), pp. 1249–1259. DOI: https://doi.org/10.1109/JSTARS.2014.2298752.

[296] G. Camps-Valls, D. Tuia, L. Bruzzone, and J. Benediktsson. "Advances in hyperspectral image classification: Earth monitoring with statistical learning methods". In: *IEEE Signal Processing Magazine* 31.1 (2014), pp. 45–54. DOI: 10.1109/MSP.2013.2279179.

[297] L. Guanter, Y. Zhang, M. Jung, J. Joiner, M. Voigt, J. Berry, C. Frankenberg, A. Huete, P. Zarco-Tejada, J.-E. Lee, M. Moran, G. Ponce-Campos, C. Beer, G. Camps-Valls, N. Buchmann, D. Gianelle, K. Klumpp, A. Cescatti, J. Baker, and T. Griffis. "Global and time-resolved monitoring of crop photosynthesis with chlorophyll fluorescence". In: *Proceedings of the National Academy of Sciences of the United States of America* 111.14 (2014), E1327–e1333. DOI: 10.1073/pnas.1320008111.

[298] E. Izquierdo-Verdiguier, L. Gómez-Chova, L. Bruzzone, and G. Camps-Valls. "Semisupervised kernel feature extraction for remote sensing image analysis". In: *IEEE Transactions on Geoscience and Remote Sensing* 52.9 (2014), pp. 5567–5578. DOI: 10.1109/TGRS.2013.2290372.

[299] V. Laparra, S. Jiménez, D. Tuia, G. Camps-Valls, and J. Malo. "Principal polynomial analysis". In: *International Journal of Neural Systems* 24.7 (2014), p. 1440007. DOI: 10.1142/s0129065714400073.

[300] M. Lázaro-Gredilla, M. Titsias, J. Verrelst, and G. Camps-Valls. "Retrieval of biophysical parameters with heteroscedastic Gaussian processes". In: *IEEE Geoscience and Remote Sensing Letters* 11.4 (2014), pp. 838–842. DOI: 10.1109/LGRS.2013.2279695.

[301] J. Rojo-álvarez, M. Martínez-Ramón, J. Muñoz Marí, and G. Camps-Valls. "A unified SVM framework for signal estimation". In: *Digital Signal Processing: A Review Journal* 26.1 (2014), pp. 1–20. DOI: https://doi.org/10.1016/j.dsp.2013.11.009.

[302] P. Ruiz, J. Mateos, G. Camps-Valls, R. Molina, and A. Katsaggelos. "Bayesian active remote sensing image classification". In: *IEEE Transactions on Geoscience and Remote Sensing* 52.4 (2014), pp. 2186–2196. DOI: 10.1109/TGRS.2013.2258468.

[303] S. Salcedo-Sanz, C. Casanova-Mateo, J. Muñoz Marí, and G. Camps-Valls. "Prediction of daily global solar irradiation using temporal Gaussian processes". In: *IEEE Geoscience and Remote Sensing Letters* 11.11 (2014), pp. 1936–1940. DOI: 10.1109/LGRS.2014.2314315.

[304] S. Salcedo-Sanz, J. L. Rojo-álvarez, M. Martínez-Ramón, and G. Camps-Valls. "Support vector machines in engineering: an overview". In: *Wiley Interdisciplinary Reviews: Data Mining and Knowledge Discovery* 4.3 (2014), pp. 234–267. ISSN: 1942-4795. DOI: https://doi.org/10.1002/widm.1125.

[305] D. Tuia, J. Muñoz Marí, J. Rojo-álvarez, M. Martínez-Ramon, and G. Camps-Valls. "Explicit recursive and adaptive filtering in reproducing kernel hilbert spaces". In: *IEEE Transactions on Neural Networks and Learning Systems* 25.7 (2014), pp. 1413–1419. DOI: 10.1109/TNNLS.2013.2293871.

[306] D. Tuia, M. Volpi, M. Trolliet, and G. Camps-Valls. "Semisupervised manifold alignment of multimodal remote sensing images". In: *IEEE Transactions on Geoscience and Remote Sensing* 52.12 (2014), pp. 7708–7720. DOI: 10.1109/TGRS.2014.2317499.

[307] J. Amorós-López, L. Gómez-Chova, L. Alonso, L. Guanter, R. Zurita-Milla, J. Moreno, and G. Camps-Valls. "Multitemporal fusion of Landsat/TM and ENVISAT/MERIS for crop monitoring". In: *International Journal of Applied Earth Observation and Geoinformation* 23.1 (2013), pp. 132–141. DOI: 10.1016/j.jag.2012.12.004.

[308] J. Arenas-García, K. Petersen, G. Camps-Valls, and L. Hansen. "Kernel multivariate analysis framework for supervised subspace learning: A tutorial on linear and kernel multivariate methods". In: *IEEE Signal Processing Magazine* 30.4 (2013), pp. 16–29. DOI: 10.1109/MSP.2013.2250591.

[309] J. Bioucas-Dias, A. Plaza, G. Camps-Valls, P. Scheunders, N. Nasrabadi, and J. Chanussot. "Hyperspectral Remote Sensing Data Analysis and Future Challenges". In: *Geoscience and Remote Sensing Magazine, IEEE* 1.2 (June 2013), pp. 6–36. ISSN: 2168-6831. DOI: 10.1109/MGRS.2013.2244672.

[310] E. Izquierdo-Verdiguier, V. Laparra, L. Gómez-Chova, and G. Camps-Valls. "Encoding invariances in remote sensing image classification with SVM". In: *IEEE Geoscience and Remote Sensing Letters* 10.5 (2013), pp. 981–985. DOI: 10.1109/LGRS.2012.2227297.

[311] J. Leiva-Murillo, L. Gómez-Chova, and G. Camps-Valls. "Multitask remote sensing data classification". In: *IEEE Transactions on Geoscience and Remote Sensing* 51.1 (2013), pp. 151–161. DOI: 10.1109/TGRS.2012.2200043.

[312] P. Ruiz, J. Mateos, G. Camps-Valls, R. Molina, and A. Katsaggelos. "Interactive Pansharpening and Active Classification in Remote Sensing". In: *Intelligent Systems Reference Library* 48 (2013), pp. 67–81. DOI: https://doi.org/10.1007/978-3-642-35932-3_5.

[313] J. Verrelst, L. Alonso, J. Rivera Caicedo, J. Moreno, and G. Camps-Valls. "Gaussian process retrieval of chlorophyll content from imaging spectroscopy data". In: *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing* 6.2 (2013), pp. 867–874. DOI: 10.1109/JSTARS.2012.2222356.

[314] J. Verrelst, J. Rivera, J. Moreno, and G. Camps-Valls. "Gaussian processes uncertainty estimates in experimental Sentinel-2 LAI and leaf chlorophyll content retrieval". In: *ISPRS Journal of Photogrammetry and Remote Sensing* 86 (2013), pp. 157–167. DOI: https://doi.org/10.1016/j.isprsjprs.2013.09.012.

[315] G. Villa, J. Moreno, A. Calera, J. Amorós-López, G. Camps-Valls, E. Domenech, J. Garrido, J. González-Matesanz, L. Gómez-Chova, J. Martínez, S. Molina, J. Peces, N. Plaza, A. Porcuna, J. Tejeiro, and N. Valcárcel. "Spectro-temporal reflectance surfaces: A new conceptual framework for the integration of remote-sensing data from multiple different sensors". In: *International Journal of Remote Sensing* 34.9-10 (2013), pp. 3699–3715. DOI: 10.1080/01431161.2012.716910.

[316] F. Alonso-Atienza, J. L. Rojo-álvarez, A. Rosado-Muñoz, J. J. Vinagre, A. García-Alberola, and G. Camps-Valls. "Feature selection using support vector machines and bootstrap methods for ventricular fibrillation detection". In: *Expert Syst. Appl.* 39 (2 Feb. 2012), pp. 1956–1967. ISSN: 0957-4174. DOI: 10.1016/j.eswa.2011.08.051.

[317] G. Camps-Valls, J. Muñoz Marí, L. Gómez-Chova, L. Guanter, and X. Calbet. "Nonlinear statistical retrieval of atmospheric profiles from MetOp-IASI and MTG-IRS infrared sounding data". In: *IEEE Transactions on Geoscience and Remote Sensing* 50.5 Part 2 (2012), pp. 1759–1769. DOI: 10.1109/TGRS.2011.2168963.

[318] G. Camps-Valls, D. Tuia, L. Gómez-Chova, S. Jiménez, and J. Malo. "Remote sensing image processing". In: *Synthesis Lectures on Image, Video, and Multimedia Processing* 12 (2012), pp. 1–194. DOI: https://doi.org/10.1007/978-3-031-02247-0.

[319] A. El Gonnouni, M. Martínez-Ramon, J. Rojo-álvarez, G. Camps-Valls, A. Figueiras-Vidal, and C. Christodoulou. "A support vector machine music algorithm". In: *IEEE Transactions on Antennas and Propagation* 60.10 (2012), pp. 4901–4910. DOI: 10.1109/TAP.2012.2209195.

[320] R. Flamary, D. Tuia, B. Labbé, G. Camps-Valls, and A. Rakotomamonjy. "Large margin filtering". In: *IEEE Transactions on Signal Processing* 60.2 (2012), pp. 648–659. DOI: 10.1109/TSP.2011.2173685.

[321] L. Gómez-Chova, R. Jenssen, and G. Camps-Valls. "Kernel entropy component analysis for remote sensing image clustering". In: *IEEE Geoscience and Remote Sensing Letters* 9.2 (2012), pp. 312–316. DOI: 10.1109/LGRS.2011.2167212.

[322] J. Gutiérrez, G. Camps-Valls, M. Luque, and J. Malo. "A Color Contrast Definition for Perceptually-based Color Image Coding". In: *Recent Patents on Signal Processing* 2.1 (2012), pp. 33–55. URL: https://www.ingentaconnect.com/content/ben/rptsp/2012/00000002/00000001/art00006.

[323] V. Laparra, S. Jiménez, G. Camps-Valls, and J. Malo. "Nonlinearities and adaptation of color vision from sequential principal curves analysis". In: *Neural Computation* 24.10 (2012), pp. 2751–2788. DOI: https://doi.org/10.1162/NECO_a_00342.

[324] J. Muñoz Marí, D. Tuia, and G. Camps-Valls. "Semisupervised classification of remote sensing images with active queries". In: *IEEE Transactions on Geoscience and Remote Sensing* 50.10 Part1 (2012), pp. 3751–3763. DOI: 10.1109/TGRS.2012.2185504.

[325] D. Tuia, J. Muñoz Marí, and G. Camps-Valls. "Remote sensing image segmentation by active queries". In: *Pattern Recognition* 45.6 (2012), pp. 2180–2192. DOI: https://doi.org/10.1016/j.patcog.2011.12.012.

[326] J. Verrelst, L. Alonso, G. Camps-Valls, J. Delegido, and J. Moreno. "Retrieval of vegetation biophysical parameters using Gaussian process techniques". In: *IEEE Transactions on Geoscience and Remote Sensing* 50.5 Part 2 (2012), pp. 1832–1843. DOI: https://doi.org/10.1109/TGRS.2011.2168962.

[327] J. Verrelst, J. Muñoz, L. Alonso, J. Delegido, J. Rivera, G. Camps-Valls, and J. Moreno. "Machine learning regression algorithms for biophysical parameter retrieval: Opportunities for Sentinel-2 and -3". In: *Remote Sensing of Environment* 118 (2012), pp. 127–139. DOI: https://doi.org/10.1016/j.rse.2011.11.002.

[328] M. Volpi, D. Tuia, G. Camps-Valls, and M. Kanevski. "Unsupervised change detection with kernels". In: *IEEE Geoscience and Remote Sensing Letters* 9.6 (2012), pp. 1026–1030. DOI: 10.1109/LGRS.2012.2189092.

[329] J. Amorós-López, L. Gómez-Chova, L. Alonso, L. Guanter, J. Moreno, and G. Camps-Valls. "Regularized multiresolution spatial unmixing for ENVISAT/MERIS and Landsat/TM image fusion". In: *IEEE Geoscience and Remote Sensing Letters* 8.5 (2011), pp. 844–848. DOI: 10.1109/LGRS.2011.2120591.

[330] J. Amorós López, E. Izquierdo Verdiguier, L. Gómez Chova, J. Muñoz Marí, J. Rodríguez Barreiro, G. Camps Valls, and J. Calpe Maravilla. "Land cover classification of VHR airborne images for citrus grove identification". In: *ISPRS Journal of Photogrammetry and Remote Sensing* 66.1 (2011), pp. 115–123. DOI: https://doi.org/10.1016/j.isprsjprs.2010.09.008.

[331] G. Camps-Valls, J. Benediktsson, L. Bruzzone, and J. Chanussot. "Introduction to the Issue on Advances in Remote Sensing Image Processing". In: *IEEE Journal of Selected Topics in Signal Processing* 5.3 (June 2011). Factor de impacto: 1.87. 'Guest Editor' del Special Issue., pp. 365–369. ISSN: 1932-4553. DOI: 10.1109/JSTSP.2011.2142490.

[332] F. García-Vílchez, J. Muñoz Marí, M. Zortea, I. Blanes, V. González-Ruiz, G. Camps-Valls, A. Plaza, and J. Serra-Sagristà. "On the impact of lossy compression on hyperspectral image classification and unmixing". In: *IEEE Geoscience and Remote Sensing Letters* 8.2 (2011), pp. 253–257. DOI: 10.1109/LGRS.2010.2062484.

[333] L. Gómez-Chova, R. Zurita-Milla, L. Alonso, J. Amorós-López, L. Guanter, and G. Camps-Valls. "Gridding artifacts on medium-resolution satellite image time series: MERIS case study". In: *IEEE Transactions on Geoscience and Remote Sensing* 49.7 (2011), pp. 2601–2611. DOI: 10.1109/TGRS.2011.2108660.

[334] V. Laparra, G. Camps-Valls, and J. Malo. "Iterative gaussianization: From ICA to random rotations". In: *IEEE Transactions on Neural Networks* 22.4 (2011), pp. 537–549. DOI: 10.1109/TNN.2011.2106511.

[335] D. Tuia and G. Camps-Valls. "Urban image classification with semisupervised multiscale cluster kernels". In: *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing* 4.1 (2011), pp. 65–74. DOI: 10.1109/JSTARS.2010.2069085.

[336] D. Tuia, J. Muñoz Marí, M. Kanevski, and G. Camps-Valls. "Structured output SVM for remote sensing image classification". In: *Journal of Signal Processing Systems* 65.3 (2011), pp. 301–310. DOI: https://doi.org/10.1007/s11265-010-0483-8.

[337] D. Tuia, J. Verrelst, L. Alonso, F. Pérez-Cruz, and G. Camps-Valls. "Multioutput support vector regression for remote sensing biophysical parameter estimation". In: *IEEE Geoscience and Remote Sensing Letters* 8.4 (2011), pp. 804–808. DOI: 10.1109/LGRS.2011.2109934.

[338] R. Zurita-Milla, L. Gómez-Chova, L. Guanter, J. Clevers, and G. Camps-Valls. "Multitemporal unmixing of medium-spatial-resolution satellite images: A case study using MERIS images for land-cover mapping". In: *IEEE Transactions on Geoscience and Remote Sensing* 49.11 Part 1 (2011), pp. 4308–4317. DOI: 10.1109/TGRS.2011.2158320.

[339] F. Bovolo, G. Camps-Valls, and L. Bruzzone. "A support vector domain method for change detection in multitemporal images". In: *Pattern Recognition Letters* 31.10 (2010), pp. 1148–1154. DOI: 10.1016/j.patrec.2009.07.002.

[340] G. Camps-Valls, J. Mooij, and B. Schölkopf. "Remote sensing feature selection by kernel dependence measures". In: *IEEE Geoscience and Remote Sensing Letters* 7.3 (2010), pp. 587–591. DOI: 10.1109/LGRS.2010.2041896.

[341] G. Camps-Valls, N. Shervashidze, and K. Borgwardt. "Spatio-spectral remote sensing image classification with graph kernels". In: *IEEE Geoscience and Remote Sensing Letters* 7.4 (2010), pp. 741–745. DOI: 10.1109/LGRS.2010.2046618.

[342] L. Gómez-Chova, G. Camps-Valls, L. Bruzzone, and J. Calpe-Maravilla. "Mean map kernel methods for semisupervised cloud classification". In: *IEEE Transactions on Geoscience and Remote Sensing* 48.1 (2010), pp. 207–220. DOI: 10.1109/TGRS.2009.2026425.

[343] V. Laparra, J. Gutiérrez, G. Camps-Valls, and J. Malo. "Image denoising with kernels based on natural image relations". In: *Journal of Machine Learning Research* 11 (2010), pp. 873–903. DOI: https://doi.org/10.48550/arXiv.1602.00217.

[344] J. Muñoz Marí, F. Bovolo, L. Gómez-Chova, L. Bruzzone, and G. Camps-Valls. "Semisupervised One-Class Support Vector Machines for Classification of Remote Sensing Data". In: *IEEE Transactions on Geoscience and Remote Sensing* 48.8 (Aug. 2010). Factor de impacto: 3.157., pp. 3188–3197. ISSN: 0196-2892. DOI: 10.1109/TGRS.2010.2045764.

[345] F. Ratle, G. Camps-Valls, and J. Weston. "Semisupervised neural networks for efficient hyperspectral image classification". In: *IEEE Transactions on Geoscience and Remote Sensing* 48.5 (2010), pp. 2271–2282. DOI: 10.1109/TGRS.2009.2037898.

[346] D. Tuia, G. Camps-Valls, G. Matasci, and M. Kanevski. "Learning relevant image features with multiple-kernel classification". In: *IEEE Transactions on Geoscience and Remote Sensing* 48.10 (2010), pp. 3780–3791. DOI: 10.1109/TGRS.2010.2049496.

[347] D. Tuia, F. Ratle, A. Pozdnoukhov, and G. Camps-Valls. "Multisource composite kernels for urban-image classification". In: *IEEE Geoscience and Remote Sensing Letters* 7.1 (2010), pp. 88–92. DOI: 10.1109/LGRS.2009.2015341.

[348] T. Bandos, L. Bruzzone, and G. Camps-Valls. "Classification of hyperspectral images with regularized linear discriminant analysis". In: *IEEE Transactions on Geoscience and Remote Sensing* 47.3 (2009), pp. 862–873. DOI: 10.1109/TGRS.2008.2005729.

[349] G. Camps-Valls, J. Muñoz Marí, L. Gómez-Chova, K. Richter, and J. Calpe-Maravilla. "Biophysical parameter estimation with a semisupervised support vector machine". In: *IEEE Geoscience and Remote Sensing Letters* 6.2 (2009), pp. 248–252. DOI: 10.1109/LGRS.2008.2009077.

[350] G. Camps-Valls, J. Muñoz Marí, M. Martínez-Ramón, J. Requena-Carrión, and J. Rojo-álvarez. "Learning non-linear time-scales with kernel gamma-filters". In: *Neurocomputing* 72.4-6 (2009), pp. 1324–1328. DOI: https://doi.org/10.1016/j.neucom.2008.10.004.

[351] L. Capobianco, A. Garzelli, and G. Camps-Valls. "Target detection with semisupervised kernel orthogonal subspace projection". In: *IEEE Transactions on Geoscience and Remote Sensing* 47.11 (2009), pp. 3822–3833. DOI: 10.1109/TGRS.2009.2020910.

[352] M. Marconcini, G. Camps-Valls, and L. Bruzzone. "A composite semisupervised SVM for classification of hyperspectral images". In: *IEEE Geoscience and Remote Sensing Letters* 6.2 (2009), pp. 234–238. DOI: 10.1109/LGRS.2008.2009324.

[353] J. Muñoz Marí, A. Plaza, J. Gualtieri, and G. Camps-Valls. "Parallel implementations of SVM for earth observation". In: *Advances in Parallel Computing* 17 (2009), pp. 292–312. DOI: 10.3233/978-1-60750-004-9-292.

[354] A. Plaza, J. Benediktsson, J. Boardman, J. Brazile, L. Bruzzone, G. Camps-Valls, J. Chanussot, M. Fauvel, P. Gamba, A. Gualtieri, M. Marconcini, J. Tilton, and G. Trianni. "Recent advances in techniques for hyperspectral image processing". In: *Remote Sensing of Environment* 113.Suppl. 1 (2009), S110–s122. DOI: https://doi.org/10.1016/j.rse.2007.07.028.

[355] D. Tuia and G. Camps-Valls. "Semisupervised remote sensing image classification with cluster kernels". In: *IEEE Geoscience and Remote Sensing Letters* 6.2 (2009), pp. 224–228. DOI: 10.1109/LGRS.2008.2010275.

[356] J. Arenas-García and G. Camps-Valls. "Efficient Kernel Orthonormalized PLS for Remote Sensing Applications". In: *IEEE Transactions on Geoscience and Remote Sensing* 46.10 (Oct. 2008), pp. 2872–2881. DOI: 10.1109/TGRS.2008.918765.

[357] G. Camps-Valls. "New machine-learning paradigm provides advantages for remote sensing". In: *SPIE Newsroom* (July 2008). DOI: https://doi.org/10.1117/2.1200806.1100. URL: https://www.spie.org/news/1100-new-machine-learning-paradigm-provides-advantages-for-remote-sensing.

[358] G. Camps-Valls, L. Gómez-Chova, J. Muñoz Marí, J. Rojo-álvarez, and M. Martínez-Ramón. "Kernel-based framework for multitemporal and multisource remote sensing data classification and change detection". In: *IEEE Transactions on Geoscience and Remote Sensing* 46.6 (2008), pp. 1822–1835. DOI: 10.1109/TGRS.2008.916201.

[359] G. Camps-Valls, J. Gutiérrez, G. Gómez-Pérez, and J. Malo. "On the suitable domain for SVM training in image coding". In: *Journal of Machine Learning Research* 9 (2008), pp. 49–66. DOI: https://doi.org/10.48550/arXiv.1310.5082. URL: https://www.jmlr.org/papers/volume9/camps-valls08a/camps-valls08a.pdf.

[360] G. Camps-Valls and A. Rodrigo-González. "Classification of satellite images with regularized AdaBoosting of RBF neural networks". In: *Studies in Computational Intelligence* 83 (2008), pp. 307–326. DOI: https://doi.org/10.1007/978-3-540-75398-8_14.

[361] L. Gómez-Chova, G. Camps-Valls, J. Muñoz Mari, and J. Calpe. "Semisupervised image classification with Laplacian support vector machines". In: *IEEE Geoscience and Remote Sensing Letters* 5.3 (2008), pp. 336–340. DOI: 10.1109/LGRS.2008.916070.

[362] L. Gómez-Chova, L. Alonso, L. Guanter, G. Camps-Valls, J. Calpe, and J. Moreno. "Correction of systematic spatial noise in push-broom hyperspectral sensors: application to CHRIS/PROBA images". In: *Applied Optics* 47.28 (Oct. 2008), F46–f60. DOI: https://doi.org/10.1364/AO.47.000F46.

[363] J. Gómez-Sanchis, L. Gómez-Chova, N. Aleixos, G. Camps-Valls, C. Montesinos-Herrero, E. Moltó, and J. Blasco. "Hyperspectral system for early detection of rottenness caused by Penicillium digitatum in mandarins". In: *Journal of Food Engineering* 89.1 (2008), pp. 80–86. DOI: https://doi.org/10.1016/j.jfoodeng.2008.04.009.

[364] J. Gómez-Sanchis, E. Moltó, G. Camps-Valls, L. Gómez-Chova, N. Aleixos, and J. Blasco. "Automatic correction of the effects of the light source on spherical objects. An application to the analysis of hyperspectral images of citrus fruits". In: *Journal of Food Engineering* 85.2 (2008), pp. 191–200. DOI: https://doi.org/10.1016/j.jfoodeng.2007.06.036.

[365] J. Rojo-álvarez, M. Martínez-Ramón, J. Muñoz Marí, G. Camps-Valls, C. Cruz, and A. Figueiras-Vidal. "Sparse deconvolution using support vector machines". In: *Eurasip Journal on Advances in Signal Processing* 2008 (2008). DOI: 10.1155/2008/816507.

[366] T. Bandos, G. Camps-Valls, and E. Soria-Olivas. "Statistical criteria for early-stopping of support vector machines". In: *Neurocomputing* 70.13-15 (2007), pp. 2588–2592. DOI: https://doi.org/10.1016/j.neucom.2006.12.019.

[367] G. Camps-Valls, T. Bandos Marsheva, and D. Zhou. "Semi-supervised graph-based hyperspectral image classification". In: *IEEE Transactions on Geoscience and Remote Sensing* 45.10 (2007), pp. 3044–3054. DOI: 10.1109/TGRS.2007.895416.

[368] G. Camps-Valls, M. Martínez-Ramón, J. Rojo-álvarez, and J. Muñoz Marí. "Nonlinear system identification with composite relevance vector machines". In: *IEEE Signal Processing Letters* 14.4 (2007), pp. 279–282. DOI: 10.1109/LSP.2006.885290.

[369] G. Camps-Valls, E. Soria-Olivas, J. Pérez-Ruixo, F. Pérez-Cruz, A. Artés-Rodríguez, and N. Jiménez-Torres. "Therapeutic drug monitoring of kidney transplant recipients using profiled support vector machines". In: *IEEE Transactions on Systems, Man and Cybernetics Part C: Applications and Reviews* 37.3 (2007), pp. 359–372. DOI: 10.1109/TSMCC.2007.893279.

[370] J. Gómez, J. Blasco, E. Moltó, and G. Camps-Valls. "Hyperspectral detection of citrus damage with Mahalanobis kernel classifier". In: *Electronics Letters* 43.20 (2007), pp. 1082–1084. DOI: 10.1049/el:20070906.

[371] J. Muñoz Marí, L. Bruzzone, and G. Camps-Valls. "A Support Vector Domain Description Approach to Supervised Classification of Remote Sensing Images". In: *IEEE Transactions on Geoscience and Remote Sensing* 45.8 (2007), pp. 2683–2692. DOI: 10.1109/TGRS.2007.897425.

[372] M. Martínez-Ramón, J. Rojo-álvarez, G. Camps-Valls, and C. Christodoulou. "Kernel antenna array processing". In: *IEEE Transactions on Antennas and Propagation* 55.3 I (2007), pp. 642–650. DOI: 10.1109/TAP.2007.891550.

[373] J. Rojo-álvarez, C. Figuera-Pozuelo, C. Martínez-Cruz, G. Camps-Valls, F. Alonso-Atienza, and M. Martínez-Ramón. "Nonuniform interpolation of noisy signals using support vector machines". In: *IEEE Transactions on Signal Processing* 55.8 (2007), pp. 4116–4126. DOI: 10.1109/TSP.2007.896029.

[374] G. Camps-Valls, L. Bruzzone, J. Rojo-álvarez, and F. Melgani. "Robust support vector regression for biophysical variable estimation from remotely sensed images". In: *IEEE Geoscience and Remote Sensing Letters* 3.3 (2006), pp. 339–343. DOI: 10.1109/LGRS.2006.871748.

[375] G. Camps-Valls, L. Gómez-Chova, J. Muñoz Marí, J. Vila-Francés, J. Amorós-López, and J. Calpe-Maravilla. "Retrieval of oceanic chlorophyll concentration with relevance vector machines". In: *Remote Sensing of Environment* 105.1 (2006), pp. 23–33. DOI: https://doi.org/10.1016/j.rse.2006.06.004.

[376] G. Camps-Valls, L. Gómez-Chova, J. Muñoz Marí, J. Vila-Francés, and J. Calpe-Maravilla. "Composite kernels for hyperspectral image classification". In: *IEEE Geoscience and Remote Sensing Letters* 3.1 (2006), pp. 93–97. DOI: 10.1109/LGRS.2005.857031.

[377] G. Camps-Valls, L. Gómez-Chova, J. Vila-Francés, J. Martin-Guerrero, A. Serrano-López, and E. Soria-Olivas. "Enhancing decision-based neural networks through local competition". In: *Neurocomputing* 69.7-9 Spec. Iss. (2006), pp. 905–908. DOI: https://doi.org/10.1016/j.neucom.2005.09.006.

[378] L. Gómez-Chova, D. Fernández-Prieto, J. Calpe, E. Soria, J. Vila-Francés, and G. Camps-Valls. "Urban Monitoring using Multitemporal SAR and Multispectral Data". In: *Pattern Recognition Letters, Special Issue on "Pattern Recognition in Remote Sensing"* 27.4 (2006), pp. 234–243. DOI: https://doi.org/10.1016/j.patrec.2005.08.004.

[379] M. Martínez-Ramón, J. Rojo-álvarez, G. Camps-Valls, J. Muñoz Marí, A. Navia-Vázquez, E. Soria-Olivas, and A. Figueiras-Vidal. "Support vector machines for nonlinear Kernel ARMA system identification". In: *IEEE Transactions on Neural Networks* 17.6 (2006), pp. 1617–1622. DOI: 10.1109/TNN.2006.879767.

[380] E. Soria-Olivas, G. Camps-Valls, J. Martín-Guerrero, J. Calpe-Maravilla, J. Vila-Francés, and A. Serrano-López. "Non-linear RLS-based algorithm for pattern classification". In: *Signal Processing* 86.5 (2006), pp. 1104–1108. DOI: https://doi.org/10.1016/j.sigpro.2005.09.004.

[381] E. Soria-Olivas, J. Martín-Guerrero, A. Serrano-López, J. Calpe-Maravilla, J. Vila-Francés, and G. Camps-Valls. "Efficient pruning of multilayer perceptrons using a fuzzy sigmoid activation function". In: *Neurocomputing* 69.7-9 Spec. Iss. (2006), pp. 909–912. DOI: https://doi.org/10.1016/j.neucom.2005.04.013.

[382] G. Camps-Valls and L. Bruzzone. "Kernel-based methods for hyperspectral image classification". In: *IEEE Transactions on Geoscience and Remote Sensing* 43.6 (2005), pp. 1351–1362. DOI: 10.1109/TGRS.2005.846154.

[383] G. Gómez-Pérez, G. Camps-Valls, J. Gutiérrez, and J. Malo. "Perceptual adaptive insensitivity for support vector machine image coding". In: *IEEE Transactions on Neural Networks* 16.6 (2005), pp. 1574–1581. DOI: 10.1109/TNN.2005.857954.

[384] O. Pastor-Bárcenas, E. Soria-Olivas, J. Martín-Guerrero, G. Camps-Valls, J. Carrasco-Rodríguez, and S. Del Valle-Tascón. "Unbiased sensitivity analysis and pruning techniques in neural networks for surface ozone modelling". In: *Ecological Modelling* 182.2 (2005), pp. 149–158. DOI: 10.1016/j.ecolmodel.2004.07.015.

[385] J. L Rojo-álvarez, G. Camps-Valls, M. Martínez-Ramón, E. Soria-Olivas, A. Navia-Vázquez, and A. R. Figueiras-Vidal. "Support vector machines framework for linear signal processing". In: *Signal Processing* 85.12 (2005), pp. 2316–26. DOI: https://doi.org/10.1016/j.sigpro.2004.12.015.

[386] G. Camps-Valls, A. Chalk, A. Serrano-López, J. Martín-Guerrero, and E. Sonnhammer. "Profiled support vector machines for antisense oligonucleotide efficay prediction". In: *BMC Bioinformatics* 5 (2004). DOI: https://doi.org/10.1186/1471-2105-5-135.

[387] G. Camps-Valls, L. Gómez-Chova, J. Calpe-Maravilla, J. Martín-Guerrero, E. Soria-Olivas, L. Alonso-Chordá, and J. Moreno. "Robust support vector method for hyperspectral data classification and knowledge discovery". In: *IEEE Transactions on Geoscience and Remote Sensing* 42.7 (2004), pp. 1530–1542. DOI: 10.1109/TGRS.2004.827262.

[388] G. Camps-Valls, M. Martínez-Ramón, J. Rojo-Álvarez, and E. Soria-Olivas. "Robust gamma-filter using support vector machines". In: *Neurocomputing* 62.1-4 (2004), pp. 493–499. DOI: http://dx.doi.org/10.1016/j.neucom.2004.07.003.

[389] G. Camps-Valls, J. Martín-Guerrero, J. Rojo-álvarez, and E. Soria-Olivas. "Fuzzy sigmoid kernel for support vector classifiers". In: *Neurocomputing* 62.1-4 (2004), pp. 501–506. DOI: https://doi.org/10.1016/j.neucom.2004.07.004.

[390] G. Camps-Valls, M. Martínez-Sober, E. Soria-Olivas, R. Magdalena-Benedito, J. Calpe-Maravilla, and J. Guerrero-Martínez. "Foetal ECG recovery using dynamic neural networks". In: *Artificial Intelligence in Medicine* 31.3 (2004), pp. 197–209. DOI: https://doi.org/10.1016/j.artmed.2004.03.005.

[391] G. Camps-Valls, A. J. Serrano-López, B. Porta-Oltra, J. D. Martín-Guerrero, E. Soria-Olivas, and N. V. Jiménez-Torres. "Neural networks for C2h cyclosporine concentration modelling". In: *Pharmacy World and Science* 26.2 (Feb. 2004), A28.

[392] G. Camps-Valls, A. Serrano-López, L. Gómez-Chova, J. Martín-Guerrero, J. Calpe-Maravilla, and J. Moreno. "Regularized RBF networks for hyperspectral data classification". In: *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)* 3212 (2004), pp. 429–436. DOI: https://doi.org/10.1007/978-3-540-30126-4_53.

[393] G. Camps-Valls, M. Martínez-Ramón, J. L. Rojo-Álvarez, and E. Soria-Olivas. "Robust gamma-filter using support vector machines". In: *Neurocomputing* 62 (2004), pp. 493–499. DOI: https://doi.org/10.1016/j.neucom.2004.07.003.

[394] J. D. Martín-Guerrero, L. Gómez-Chova, G. Camps-Valls, A. Serrano, J. Vila-Francés, J. Calpe-Maravilla, and E. Soria-Olivas. "Channel equalisation using a soft back-propagation learning algorithm". In: *Journal of Electrical Engineering* 55.5-6 (2004), pp. 156–160. URL: http://iris.elf.stuba.sk/cgi-bin/jeeec?act=abs&no=05-06_104&ttl=7.

[395] J. Martín-Guerrero, E. Balaguer-Ballester, G. Camps-Valls, A. Palomares, A. Serrano-López, J. Gómez-Sanchís, and E. Soria-Olivas. "Machine learning methods for one-session ahead prediction of accesses to page categories". In: *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)* 3137 (2004), pp. 421–424. DOI: https://doi.org/10.1007/978-3-540-27780-4_65.

[396] J. D. Martín, E. Soria, G. Camps, A. J. Serrano, J. R. Sepúlveda, and V. Jiménez. "Neural networks as effective techniques in clinical management of patients: some case studies". In: *Transactions of the Institute of Measurement and Control* 26.3 (2004), pp. 169–183. DOI: https://doi.org/10.1191/0142331204tm118oa.

[397] S. Salcedo-Sanz, G. Camps-Valls, F. Pérez-Cruz, J. Sepúlveda-Sanchis, and C. Bousono-Calzón. "Enhancing genetic feature selection through restricted search and Walsh analysis". In: *IEEE Transactions on Systems, Man and Cybernetics Part C: Applications and Reviews* 34.4 (2004), pp. 398–406. DOI: 10.1109/TSMCC.2004.833301.

[398] E. Soria, J. Calpe, J. Chambers, M. Martínez, G. Camps-Valls, and J. D. Martín-Guerrero. "A novel approach to introducing adaptive filters based on the LMS algorithm and its variants". In: *IEEE Transactions on Education* 47.1 (Apr. 2004), pp. 127–133. DOI: 10.1109/TE.2003.822632.

[399] G. Camps-Valls, L. Gómez-Chova, J. Calpe-Maravilla, E. Soria-Olivas, J. Martín-Guerrero, and J. Moreno. "Support vector machines for crop classification using hyperspectral data". In: *Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)* 2652 (2003), pp. 134–141. DOI: https://doi.org/10.1007/978-3-540-44871-6_16.

[400] G. Camps-Valls, B. Porta-Oltra, E. Soria-Olivas, J. Martín-Guerrero, A. Serrano-López, J. Pérez-Ruixo, and N. Jiménez-Torres. "Prediction of cyclosporine dosage in patients after kidney transplantation using neural networks". In: *IEEE Transactions on Biomedical Engineering* 50.4 (2003), pp. 442–448. DOI: 10.1109/TBME.2003.809498.

[401] J. Martín-Guerrero, G. Camps-Valls, E. Soria-Olivas, A. Serrano-López, J. Pérez-Ruixo, and N. Jiménez-Torres. "Dosage individualization of erythropoietin using a profile-dependent support vector regression". In: *IEEE Transactions on Biomedical Engineering* 50.10 (2003), pp. 1136–1142. DOI: 10.1109/TBME.2003.816084.

[402] J. Martín Guerrero, E. Soria Olivas, G. Camps Valls, A. Serrano López, J. Pérez Ruixo, and N. Jiménez Torres. "Use of neural networks for dosage individualisation of erythropoietin in patients with secondary anemia to chronic renal failure". In: *Computers in Biology and Medicine* 33.4 (2003), pp. 361–373. DOI: https://doi.org/10.1016/S0010-4825(02)00065-3.

[403] E. Soria-Olivas, J. Martín-Guerrero, G. Camps-Valls, A. Serrano-López, J. Calpe-Maravilla, and G.-C. L. "A low-complexity fuzzy activation function for artificial neural networks". In: *IEEE Transactions on Neural Networks* 14.6 (Nov. 2003). Factor de impacto: 1.666., pp. 1379–1380. DOI: 10.1109/TNN.2003.820444.

[404] E. Balaguer Ballester, G. Camps i Valls, J. L. Carrasco-Rodríguez, E. Soria-Olivas, and S. del Valle-Tascón. "Effective 1-day ahead prediction of hourly surface ozone concentrations in eastern Spain using linear models and neural networks". In: *Ecological Modelling* 156.1 (2002). Factor de impacto: 1.308, pp. 27–41. DOI: https://doi.org/10.1016/S0304-3800(02)00127-8.

[405] G. Camps-Valls, E. Soria-Olivas, J. Pérez-Ruixo, F. Pérez-Cruz, A. Figueiras-Vidal, and A. Artés-Rodríguez. "Cyclosporine concentration prediction using clustering and support vector regression methods". In: *Electronics Letters* 38.12 (2002), pp. 568–570. DOI: https://doi.org/10.1049/el:20020354.

[406] F. Pérez-Cruz, G. Camps-Valls, E. Soria-Olivas, J. J. Pérez-Ruixo, A. R. Figueiras-Vidal, and A. Artés-Rodríguez. "Multi-dimensional Function Approximation and Regression Estimation". In: *Lecture Notes in Computer Science (LNCS)* 2415 (Aug. 2002). Factor de impacto: 0.515., pp. 757–782. DOI: https://doi.org/10.1007/3-540-46084-5_123.

[407] G. Camps-Valls, E. Soria-Olivas, J. D. Martín-Guerrero, J. J. Pérez-Ruixo, and N. V. Jiménez-Torres. "Neural Networks Ensemble for Cyclosporine Concentration Monitoring". In: *Lecture Notes in Computer Science (LNCS)* 2130 (Aug. 2001), pp. 706–711. DOI: https://doi.org/10.1007/3-540-44668-0_98.

[408] A. J. Serrano, E. Soria, G. Camps, and J. D. Martín. "Some examples for solving Clinical Problems using Neural Networks". In: *Lecture Notes in Computer Science (LNCS)* 2085 (June 2001), pp. 345–355. DOI: https://doi.org/10.1007/3-540-45723-2_41.

[409] E. Soria Olivas, N. Jiménez Torres, A. Serrano López, and G. Camps Valls. "Artificial neuronal networks: A new tool for pharmaceutical care [Redes neuronales artificiales: Una nueva herramienta para la atención farmacéutica]". In: *Atencion Farmaceutica* 2.1 (2000), pp. 102–110.

[410] M. P. López Lereu, J. F. Guerrero Martínez, J. Chorro, J. Muñoz, A. Berenguer, J. Ampudia, J. Ascaso, G. Camps-Valls, R. García Civera, and V López Merino. "Análisis de la variabilidad de la frecuencia cardiaca en pacientes diabéticos con neuropatía autonómica cardiovascular". In: *Revista Española de Cardiología* Vol 52.Suppl. 4 (Oct. 1999), p. 62.

[411] M. P. López Lereu, J. F. Guerrero Martínez, J. Chorro, J. Muñoz, A. Berenguer, J. Ampudia, J. Ascaso, G. Camps-Valls, R. García Civera, and V López Merino. "Detección precoz de disfunción autonómica en diabéticos Tipo I mediante el análisis de la variabilidad de la frecuencia cardiaca". In: *Revista Española de Cardiología* Vol 52.Suppl. 4 (Oct. 1999), p. 157.

[412] K.-H. Cohrs, G. Varando, E. Diaz, V. Sitokonstantinou, and G. Camps-Valls. "Large Language Models for Constrained-Based Causal Discovery". In: *arXiv preprint arXiv:2406.07378* (Submitted). DOI: https://doi.org/10.48550/arXiv.2406.07378.

[413] F. Müller, L. Eifler, F. Cremer, G. Camps-Valls, and A. Bastos. "Automating Forest Disturbance Detection: A Sentinel-1 Approach to Refine Aerial Survey Data". In: (Submitted).

[414] Z. Xiong, Y. Wang, F. Zhang, A. J. Stewart, J. Hanna, D. Borth, I. Papoutsis, B. L. Saux, G. Camps-Valls, and X. X. Zhu. "Neural plasticity-inspired multimodal foundation model for Earth observation". In: *arXiv preprint arXiv:2403.15356* (Submitted). DOI: https://doi.org/10.48550/arXiv.2403.15356.

Conference Papers

[1] G. Camps-Valls. "Integrating AI for Climate Resilience". In: *EGU General Assembly 2026*. EGU26-22994, Session NH6.4. European Geosciences Union. Vienna, Austria & Online, 2026.

[2] G. Camps-Valls, R. Guimerà, G. Varando, E. Diaz, K.-H. Cohrs, and M. Sales-Pardo. "Causal discovery from equation discovery". In: *EGU General Assembly 2026*. EGU26-13632, Session ITS1.8/CL0.2. European Geosciences Union. Vienna, Austria & Online, 2026.

[3] H. Durand, G. Varando, and G. Camps-Valls. "Granger PCA: Extracting Granger-causal patterns in climate fields". In: *EGU General Assembly 2026*. EGU26-10055, Session ITS1.8/CL0.2. European Geosciences Union. Vienna, Austria & Online, 2026.

[4] P. Frazzetto, A. Gavrilov, J. Cerdà-Bautista, D. Piovani, and G. Camps-Valls. "Comparative Approaches for Detecting Critical Transitions in Food Crises". In: *EGU General Assembly 2026*. EGU26-20227, Session ITS4.24/NH13.8. European Geosciences Union. Vienna, Austria & Online, 2026.

[5] A. Gavrilov, N. Mankovich, M. Link, F. Huang, and G. Camps-Valls. "Kernel Taylor Diagram for Earth System Model Evaluation". In: *EGU General Assembly 2026*. EGU26-7678, Session ITS1.8/CL0.2. European Geosciences Union. Vienna, Austria & Online, 2026.

[6] F. Huang, G. Camps-Valls, A. Winkler, C. Reimers, N. Carvalhais, and A. Gavrilov. "Causal disentangling of soil moisture and temperature feedbacks on surface climate extremes under vegetation change". In: *EGU General Assembly 2026*. EGU26-12361, Session CL4.4. European Geosciences Union. Vienna, Austria & Online, 2026.

[7] M. Mahecha, G. Kraemer, M. Renhardt, D. Montero, F. Gans, A. Bastos, H. Feilhauer, I. Flik, C. Ji, T. Kattenborn, M. Migliavacca, M. Mönks, J. Quaas, S. Sippel, S. Walther, S. Wieneke, C. Wirth, and G. Camps-Valls. "Global shifts in Earth's seasonal green wave". In: *EGU General Assembly 2026*. EGU26-17483, Session CL2.4. European Geosciences Union. Vienna, Austria & Online, 2026.

[8] N. Mankovich, A. Gavrilov, and G. Camps-Valls. "Dynamic Mode Decomposition with Control for Forced Response Estimation". In: *EGU General Assembly 2026*. EGU26-11895, Session NP1.1. European Geosciences Union. Vienna, Austria & Online, 2026.

[9] N. Mankovich, A. Gavrilov, F. Huang, G. Camps-Valls, F. Lan, and A. Bodas-Salcedo. "Explainable Cloud Feedback Evaluation in Earth System Models". In: *EGU General Assembly 2026*. EGU26-13326, Session ITS1.8/CL0.2. European Geosciences Union. Vienna, Austria & Online, 2026.

[10] K. Monsalvez-Pozo, F. Granell-Haro, M. Martinez-Roig, V. Galván Fraile, N. P. Plaza-Martín, M. O. P. Ramacher, J. Bieser, J. Flemming, M. Razinger, P. Harder, C. Azorin-Molina, and G. Camps-Valls. "AFNO-based downscaling of global air pollution fields". In: *EGU General Assembly 2026*. EGU26-12008, Session ITS1.8/CL0.2. European Geosciences Union. Vienna, Austria & Online, 2026.

[11] A. Moreno-Martinez, E. Izquierdo-Verdiguier, J. Muñoz-Mari, J. Hirn, A. Endsley, A. Desai, S. Metzger, S. J. Bower, N. Robinson, S. Greenberg, N. Clinton, and G. Camps-Valls. "From Global to Local: Precision Carbon Flux Mapping for Natural Climate Solutions". In: *EGU General Assembly 2026*. EGU26-12874, Session BG2.4. European Geosciences Union. Vienna, Austria & Online, 2026.

[12] F. Müller, A. Bastos, and G. Camps-Valls. "Balancing Spatial, Spectral, and Temporal Information: Which Dimension Drives Deep Learning Performance in Forest Disturbance Classification?" In: *EGU General Assembly 2026*. EGU26-1823, Session BG9.4. European Geosciences Union. Vienna, Austria & Online, 2026.

[13] O. J. Pellicer-Valero, C. Aybar, M. Czerkawski, C. Oliver, K. Monsálvez, J. Contreras, and G. Camps-Valls. "TACO: Operationalizing AI-Ready EO datasets". In: *EGU General Assembly 2026*. EGU26-8000, Session ESSI2.3. European Geosciences Union. Vienna, Austria & Online, 2026.

[14] K. Ponse, K.-H. Cohrs, P. Wozny, A. R. Williams, T. Zhang, E. Acar, Y. Bengio, A. Plaat, T. Moerland, P. Gentine, and G. Camps-Valls. "Leveraging Differentiable Climate-Economy Models for Hybrid Modeling and Inverse Problems". In: *EGU General Assembly 2026*. EGU26-11690, Session ITS1.10/BG10.6. European Geosciences Union. Vienna, Austria & Online, 2026.

[15] M. Sapena, N. Papadopoulos, G. Athanasiou, I. Papoutsis, and G. Camps-Valls. "Predicting multi-sectoral drought impacts in the Mediterranean with spatio-temporal deep learning". In: *EGU General Assembly 2026*. EGU26-7822, Session ITS1.2/NH13.7. European Geosciences Union. Vienna, Austria & Online, 2026.

[16] M. Zhang, F. Huang, A. Gavrilov, N. Mankovich, M.-Á. Fernández-Torres, and G. Camps-Valls. "Identifying the Restructuring of Forced Responses and Internal Variability in Soil Moisture–Precipitation Coupling Mechanisms". In: *EGU General Assembly 2026*. EGU26-8630, Session CL4.4. European Geosciences Union. Vienna, Austria & Online, 2026.

[17] G. Ascenso, M. Giuliani, J. Pérez-Aracil, S. Salcedo-Sanz, C. Bertini, G. Camps-Valls, P. Bonetti, N. Linscheid, M. Merlo, M.-Á. Fernández-Torres, G. Palcic, A. Ficchì, M. Reichstein, A. Toreti, A. Castelletti, M. Restelli, and E. Walt. "Data Bottlenecks and Algorithmic Lag in AI for Droughts: A Review of 20-Years Worth of Trends". In: *AGU25 Annual Meeting*. Poster H41M-1331; Hall EFG (Poster Hall), New Orleans Ernest N. Morial Convention Center; presented 18 Dec 2025, 08:30–12:00 CST. American Geophysical Union. New Orleans, Louisiana, USA, Dec. 2025.

[18] G. Camps-Valls. "Advancing AI for Earth sciences with hybrid and causal models". In: *EGU General Assembly 2025, Session NP1.1 – Mathematics of Planet Earth*. 2025.

[19] G. Camps-Valls. "Keynote Presentation: Advancing AI for Earth Observation". In: Keynote invited presentation. 2025. URL: https://philab.esa.int/advancing-ai-for-earth-observation-at-the-reo-workshop/.

[20] G. Camps-Valls. "Presentation at Workshop on Artificial Intelligence for Carbon". In: Invited speaker / contributor. 2025. URL: https://www.eiee.org/workshop-on-artificial-intelligence-for-carbon/.

[21] G. Camps-Valls. "Talk on Machine Learning Sustainability". In: Invited presentation; virtual and hybrid. 2025. URL: https://www.bgc-jena.mpg.de/en/bgi/events.

[22] G. Camps-Valls et al. "Causal Weighting for Climate Projections". In: *EGU General Assembly 2025, Session ITS1.1/CL0.9 – Machine Learning for Climate Science*. 2025.

[23] H. Durand, G. Camps-Valls, G. Varando, and N. Mankovich. "Out-of-distribution robustness for multivariate analysis via causal regularisation". In: *The 28th International Conference on Artificial Intelligence and Statistics*. 2025. URL: https://openreview.net/forum?id=jMV46QmlAB.

[24] H. Durand, G. Varando, and G. Camps-Valls. "Learning Causal Response Representations through Direct Effect Analysis". In: *Proceedings of the 41st Conference on Uncertainty in Artificial Intelligence (UAI 2025)*. Poster session. 2025. URL: https://openreview.net/forum?id=NEjWAUUZCg.

[25] E. Izquierdo, A. Moreno, J. Muñoz, J. Hirn, L. Martínez-Ferrer, and G. Camps-Valls. "High-Resolution Carbon Flux Monitoring using a Global Estimation Model (CARBON-GEM) in Google Earth Engine". In: *AGU25 Annual Meeting*. Poster B31K-1862; Hall EFG (Poster Hall), New Orleans Ernest N. Morial Convention Center; presented 17 Dec 2025, 08:30–12:00 CST. American Geophysical Union. New Orleans, Louisiana, USA, Dec. 2025.

[26] L. Lliso, N. Peinado-Galan, O. Pellicer-Valero, R. Lopez, P. Rípodas, X. Calbet, G. Camps-Valls, and I. Gultepe. "Nowcasting of Fog Using AI (NAI) Techniques Using Satellite Observations". In: *105th AMS Annual Meeting*. AMS. 2025. URL: https://ams.confex.com/ams/105ANNUAL/meetingapp.cgi/Paper/446940.

[27] N. Mankovich and G. Camps-Valls. "Physics-aware kernel Koopman operator estimation for consistent nonlinear mode decomposition". In: *EGU General Assembly 2025, Session NP2.2 – Data-driven Methods for the Discovery of Oceanic and Atmospheric Dynamical Systems*. EGU25-9070. 2025.

[28] N. Mankovich, I. Santamaria, G. Camps-Valls, and T. Birdal. "A Flag Decomposition for Hierarchical Datasets". In: *Proceedings of the Computer Vision and Pattern Recognition Conference*. 2025, pp. 18738–18748.

[29] A. Moreno, J. Muñoz, J. Knighton, P. Sanchez Martinez, L. D. L. Anderegg, B. Dechant, F. D. Schneider, J. Kattge, A. Koppa, D. G. Miralles, T. Kattenborn, and G. Camps-Valls. "Mapping Tree Hydraulics and Assemblages at Continental Scale". In: *AGU25 Annual Meeting*. Poster B13J-1673; Hall EFG (Poster Hall), New Orleans Ernest N. Morial Convention Center; presented 15 Dec 2025, 14:15–17:45 CST. American Geophysical Union. New Orleans, Louisiana, USA, Dec. 2025.

[30] G. C.-V. et al. "Large Language Models for Causal Discovery in the Earth Sciences". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2024. Vol. Vol. 26. EGU. Hybrid, 14-19 April 2024, 2024. DOI: https://doi.org/10.5194/egusphere-egu24-21883. URL: https://meetingorganizer.copernicus.org/EGU24/EGU24-21883.html.

[31] J. M. Aroca, J. F. D. Pastor, P. Latorre-Carmona, A. C. Oneto, J. C. Rad, G. Camps-Valls, V. Elvira, and C. García-Osorio. "WALGREEN: Web Based Platform for Soil Organic Carbon Inference Applications". In: *IGARSS 2024-2024 IEEE International Geoscience and Remote Sensing Symposium*. IEEE. 2024, pp. 3992–3996. DOI: https://doi.org/10.1109/IGARSS53475.2024.10642525.

[32] G. Camps-Valls. "Causality is all you need". In: ed. by S. Dzeroski, H. H. Hoos, B. L. Saux, L. van der Torre, and A. Kostovska. Dagstuhl, Germany: Schloss Dagstuhl–Leibniz-Zentrum fuer Informatik, 2024, p. 86. DOI: https://doi.org/10.4230/DagRep.13.11.72.

[33] G. Camps-Valls, V. Sitokonstantinou, J. Cerdá, E. Diaz, G. Varando, and M. Piles. "Causal Machine Learning for Sustainable Agriculture and Food Security". In: *AGU24*. AGU, 2024.

[34] J. Cerdà-Bautista, J. M. Tárraga, V. Sitokonstantinou, and G. Camps-Valls. "Assessing the Causal Impact of Humanitarian Aid on Food Security". In: *IGARSS 2024-2024 IEEE International Geoscience and Remote Sensing Symposium*. IEEE. 2024, pp. 1546–1552. DOI: https://doi.org/10.1109/IGARSS53475.2024.10642230.

[35] J Cerdà, J. Tarraga, V. Sitokonstantinou, and G. Camps-Valls. "Evaluating the Causal Impact of Humanitarian Interventions on Food Insecurity in Climate-Vulnerable Regions of Africa". In: *EO for Agriculture Under Pressure 2024 Workshop*. ESA/ESRIN, Frascati, Italy, 2024. URL: https://eo4agri2024.esa.int/.

[36] D. Chaparro, T. Jagdhuber, M. Piles, F. Jonard, A. Fluhrer, M. Vall-llossera, A. Camps, C. López-Martínez, R. Fernández-Morán, M. J. Baur, et al. "Live fuel moisture content estimates in the Western USA using radiometer-radar-lidar synergy". In: Zenodo, 2024. DOI: https://doi.org/10.5281%2Fzenodo.10479627.

[37] K.-H. Cohrs, G. Varando, R. Guimerà, M. Sales-Pardo, and G. Camps-Valls. "Semiparametric Inference and Equation Discovery with the Bayesian Machine Scientist". In: *AI for Differential Equations in Science Workshop in ICLR 2024*. Vienna, AU, 2024.

[38] W. Ding and G. Camps-Valls. "Overview of ACM SIGKDD 2024 AI4Science4AI Special Day". In: *Proceedings of the 30th ACM SIGKDD Conference on Knowledge Discovery and Data Mining*. KDD '24. Barcelona, Spain: Association for Computing Machinery, 2024, 6693–6694. ISBN: 9798400704901. DOI: 10.1145/3637528.3673871. URL: https://doi.org/10.1145/3637528.3673871.

[39] I Luna, V. Sitokonstantinou, M. Piles, J. Munoz, G. Camps-Vals, P Szabo, M. Meroni, F. Collivignarelli, P. Vojnovic, H. Kerdiles, F. Rembold, M. Zappacosta, and J. Pound. "Operational Machine Learning Models for Nation-level Yield Predictions". In: *EO for Agriculture Under Pressure 2024 Workshop*. ESA/ESRIN, Frascati, Italy, 2024. URL: https://eo4agri2024.esa.int/.

[40] M. Mankovich, S. Bouabid, and G. Camps-Valls. "Analyzing Climate Scenarios Using Dynamic Mode Decomposition With Control". In: *Dynamics, Data and Deep Learning workshop*. Bristol, UK, 2024. DOI: https://doi.org/10.5194/egusphere-egu24-11831. URL: https://meetingorganizer.copernicus.org/EGU24/EGU24-11831.html.

[41] N. Mankovich, G. Camps-Valls, and T. Birdal. "Fun with Flags: Robust Principal Directions via Flag Manifolds". In: *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition*. 2024, pp. 330–340. URL: https://openaccess.thecvf.com/content/CVPR2024/html/Mankovich_Fun_with_Flags_Robust_Principal_Directions_via_Flag_Manifolds_CVPR_2024_paper.html.

[42] P. Pelucchi, J. Vicent, and G. Camps-Valls. "Towards probabilistic aerosol retrievals with invertible neural networks". In: *Climate Informatics*. London, UK, 2024. URL: https://www.eventsforce.net/turingevents/frontend/reg/tOtherPage.csp?pageID=150908&ef_sel_menu=2178&eventID=358.

[43] J. M. Tárraga, M. Piles, E. Kamateri, E. S. Marco, I. Tsampoulatidis, J. Muñoz-Marí, and G. Camps-Valls. "Drought Displacement Forecasts Can Be Improved With Twitter Data". In: *IGARSS 2024-2024 IEEE International Geoscience and Remote Sensing Symposium*. IEEE. 2024, pp. 3984–3987. DOI: https://doi.org/10.1109/IGARSS53475.2024.10642237.

[44] I Tsoumas, G Giannarakis, V. Sitokonstantinou, G. Camps-Valls, and Kontoes. "Personalizing crop choice to increase soil organic carbon with causal inference". In: *EO for Agriculture Under Pressure 2024 Workshop*. ESA/ESRIN, Frascati, Italy, 2024. DOI: https://doi.org/10.48550/arXiv.2211.03179. URL: https://eo4agri2024.esa.int/.

[45] J. Vicent, L. Martino, and G. Camps-Valls. "Physics-aware emulators for atmospheric correction". In: *Proceedings of the 3rd Workshop on International Cooperation in Spaceborne Imaging Spectroscopy – Hyperspectral 2024*. Abstract. ESA-ESTEC, Noordwijk, the Netherlands, 2024. DOI: https://doi.org/10.1016/j.asoc.2018.03.021.

[46] S. Zhao, I. Prapas, I. Karasante, Z. Xiong, I. Papoutsis, G. Camps-Valls, and X. X. Zhu. "Causal Graph Neural Networks for Wildfire Danger Prediction". In: *Machine Learning for Remote Sensing Workshop in ICLR 2024*. Vienna, AU, 2024. DOI: https://doi.org/10.48550/arXiv.2403.08414.

[47] J. G.-J. andJulia Amorós-López, A. B. Ruescas, and G. Camps-Valls. "Evaluation of Dimensionality Reduction Approaches for Optical Water Type Classification using EnMAP". In: *Machine Learning And Data Analysis In Oceanography. 2023 edition of the Liège Colloquium*. University of Liège, Place du XX-Août, 7 - 4000 Liège - Belgium, 2023.

[48] M. Anand, L. belle Sweet, G. Camps-Valls, F. J. Bohn, R. Fischer, A. Huth, and J. Zscheischler. "Insights into weather-driven forest mortality with a cross-modal transformer". In: *AGU23*. San Francisco, USA: American Geophysical Union (AGU), 2023.

[49] G. Camps-Valls. "AI for Sustainable Earth Sciences". In: *IbPRIA 2023*. Alacant, 2023.

[50] G. Camps-Valls. "AI for the Earth sciences". In: *IAHR World Congress 2023*. Vienna, Austria, 2023.

[51] G. Camps-Valls. "Machine learning for modeling and understanding the Earth system". In: *Summer school, ESSAI/ACAI 2023*. Ljubljana, Slovenia, 2023.

[52] M. F. Celik, M. S. Isik, E. Erten, and G. Camps-Valls. "Explainability of end and mid-season cotton yield predictors in CONUS". In: *2023 IEEE International Geoscience and Remote Sensing Symposium IGARSS*. 2023.

[53] J. Cerdà-Bautista, J. M. Tárraga, G. Varando, A. Arribas, T. Shepherd, and G. Camps-Valls. "Causal inference to study food insecurity in Africa". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2023. Vol. Vol. 25. EGU. Hybrid, 23-28 April 2023, 2023.

[54] J. Cerdà-Bautista, J. M. Tárraga, V. Sitokonstantinou, and G. Camps-Valls. "Evaluating the Impact of Humanitarian Aid on Food Security". In: 2023.

[55] J. Cerdà, J. M. Tarraga, E. Sevillano, J. Munoz-Mari, M. Piles, and G. Camps-Valls. "Understanding food insecurity in Africa through data-driven causal inference methods". In: *World Climate Research Program*. Kigali, Rwanda: WRCP, 2023.

[56] D. Chaparro, T. Jagdhuber, A. Fluhrer, M. Piles, R. Fernández-Morán, F. Jonard, M. Vall-llossera, A. Camps, C. López-Marínez, M. J. Baur, A. F. Feldman, and D. Entekhabi. "Estimation of Gravimetric Vegetation Moisture in the Western United States Using a Multi-Sensor Approach". In: *2023 IEEE International Geoscience and Remote Sensing Symposium IGARSS*. 2023.

[57] K.-H. Cohrs, G. Varando, N. Carvalhais, M. Reichstein, and G. Camps-Valls. "Double machine learning for geosciences". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2023. Vol. Vol. 25. EGU. Hybrid, 23-28 April 2023, 2023.

[58] J. Cortés-Andrés, M. Gonzalez-Calabuig, M. Zhang, T. K. E. Williams, M.- Fernández-Torres, O. J. Pellicer-Valero, and G. Camps-Valls. "xaida4Detection: A Toolbox for the Detection and Characterization of Spatio-Temporal Extreme Events". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2023. Vol. Vol. 25. EGU. Hybrid, 23-28 April 2023, 2023.

[59] V. Elvira, E. Chouzenoux, J Cerdà-Bautista, and Camps-Valls. "Graphs in State-Space Models for Granger Causality in Climate Science". In: *CausalStats23: When Causal Inference meets Statistical Analysis*. 2023.

[60] E. F. Y. Gulsen Taskin and G. Camps. "A Scalable Unsupervised Feature Selection With Orthogonal Graph Representation for Hyperspectral Images". In: *Workshop on Hyperspectral Image and Signal Processing: Evolution in Remote Sensing. IEEE WHISPERS 2023*. IEEE. Athens, Greece, 2023, pp. 1–4.

[61] C. Ji, G. Kraemer, D. Montero, K. Mora, S. Wieneke, M. D. Mahecha, L. University, G. V. Benson, F. Gans, M. Reichstein, M. Weynants, M.-P.-I. for Biogeochemistry, G. G. Brandt, C. Brockmann, N. Fomferra, T. Fincke, C. Requena-Mesa, B. C. GmbH, G. G. Camps-Valls, M. G. Calabuig, M.- Fernández-Torres, G. M. García, L. Gómez-Chova, E. S. Marco, and O. J. P. Valero. "deepextremes: Explainable Earth surface forecasting under compound climate extremes". In: *2023 IEEE International Geoscience and Remote Sensing Symposium IGARSS*. 2023.

[62] S. Kondylatos, I. Prapas, I Papoutsis, and G. Camps-Valls. "Wildfire danger forecasting with deep learning under label noise". In: *2023 IEEE International Geoscience and Remote Sensing Symposium IGARSS*. 2023.

[63] S. Kondylatos, I. Prapas, G. Camps-Valls, and I. Papoutsis. "Mesogeos: A multi-purpose dataset for data-driven wildfire modeling in the Mediterranean". In: *Thirty-seventh Conference on Neural Information Processing Systems Datasets and Benchmarks Track, NeurIPS 2023*. 2023.

[64] S. Kondylatos, I. Prapas, I. Papoutsis, and G. C.-V. and. "Wildfire danger forecasting with deep learning under label noise". In: *2023 IEEE International Geoscience and Remote Sensing Symposium IGARSS*. 2023.

[65] A. Koskina, M. Plionis, I. Papoutsis, and G. Camps-Valls. "Earth observation as a tool to assess climate migration and policy-making: legal aspects". In: *ICED2023, 4th International Conference on Environmental Design, ICED2023*. ICED. Athens, Greece, 2023, pp. 1–6.

[66] L. Martínez-Ferrer, Moreno-Martínez, J. Muñoz-Marí, E. Izquierdo-Verdiguier, J. S. Kimball, S. W. Running, N. Clinton, and G. Camps-Valls. "Physics-Aware Machine Learning for Carbon Fluxes at High Spatio-Temporal Resolution and Scales". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2023. Vol. Vol. 25. EGU. Hybrid, 23-28 April 2023, 2023.

[67] L. Martínez-Ferrer, Moreno-Martínez, J. Muñoz-Marí, H. Meyer, M. Ludwig, and G. Camps-Valls. "Gaussian Processes for vegetation traits global mapping". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2023. Vol. Vol. 25. EGU. Hybrid, 23-28 April 2023, 2023.

[68] O. J. Pellicer-Valero, M. Fernández-Torres, and G. Camps-Valls. "Explainable Artificial Intelligence for Extreme Event Forecasting on Sentinel-2". In: *EC-ESA Joint Earth System Science Initiative*. Frascati, Italy: ESA, 2023.

[69] P. Pelucchi, J. Vicent, J. E. Johnson, P. Stier, and G. Camps-Valls. "Invertible neural networks for satellite retrievals of aerosol optical depth". In: *EGU General Assembly Conference Abstracts*. 2023, EGU–7465. DOI: https://ui.adsabs.harvard.edu/link_gateway/2023EGUGA..25.7465P/doi:10.5194/egusphere-egu23-7465.

[70] P. Pelucchi, J. Vicent, J. E. Johnson, P. Stier, and G. Camps-Valls. "Invertible neural networks for satellite retrievals of aerosol optical depth". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2023. Vol. Vol. 25. EGU. Hybrid, 23-28 April 2023, 2023.

[71] E. D. S. Porras, G. Varando, F. Iglesias-Suarez, G. Camps-Valls, K. Tazi, K. Lamb, and D. Watson-Parris. "Learning causal drivers of PyroCb". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2023. Vol. Vol. 25. EGU. Hybrid, 23-28 April 2023, 2023.

[72] I. Prapas, N. I. Bountos, S. Kondylatos, D. Michail, G. Camps-Valls, and I. Papoutsis. "TeleViT: Teleconnection-driven Transformers Improve Subseasonal to Seasonal Wildfire Forecasting". In: *ICCV 2023. Workshop on Artificial Intelligence for Humanitarian Assistance and Disaster Response Workshop - AI + HADR 2023*. Paris, France, 2023.

[73] I. Prapas, W. J. Leong, R. B. Mahesh, V. Boehm, I. Papoutsis, G. Camps-Valls, S. Ganju, E. Nemni, F. Kalaitzis, and R. Ramos-Pollan. "Regional transferability of deep learning models for landslide detection with SAR data". In: *2023 IEEE International Geoscience and Remote Sensing Symposium IGARSS*. 2023.

[74] I. Prapas, I. Papoutsis, W. J. Leong, R. B. Mahesh, V. Boehm, G. Camps-Valls, E. Nemni, F. Kalaitzis, and R. Ramos-Pollan. "Regional transferability of deep learning models for landslide detection with SAR data". In: *2023 IEEE International Geoscience and Remote Sensing Symposium IGARSS*. 2023.

[75] M. Ronco, S. Kondylatos, I. Prapas, I. Papoutsis, G. Camps-Valls, M. Piles, M.- Fernández-Torres, R. Son, and N. Carvalhais. "Wildfire prediction and understanding with deep learning". In: *IUGG 2023, AI for Natural Hazards and Disaster Management*. IUGG. Berlin, Germany, 2023, p. 1.

[76] J. M. Tárraga, M. Ronco, E. S. Marco, G. Camps-Valls, M. T. Miranda, J. Muñoz, M. Piles, and J. Cerdá. "Causal and Explainable Machine learning to understand disaster-induced displacement". In: *AGU23*. San Francisco, USA: American Geophysical Union (AGU), 2023.

[77] J. M. Tarraga, E. Sevillano, J. Munoz-Mari, M. Piles, and G. Camps-Valls. "Causal and explainable machine-learning models for hazard-induced displacement". In: *World Climate Research Program*. Kigali, Rwanda: WRCP, 2023.

[78] I. Tsoumas, V. Sitokonstantinou, G. Giannarakis, E. Lampiri, C. Athanassiou, G. Camps-Valls, C. Kontoes, and I. Athanasiadis. "Causality and Explainability for Trustworthy Integrated Pest Management". In: *NeurIPS 2023 Workshop: Tackling Climate Change with Machine Learning*. 2023.

[79] G. Varando, H. Durand, M.-A. Fernandez-Torres, J. Munoz-Mari, M. Piles, and G. Camps-Valls. "Learning Causal Representations with Granger Rotated PCA". In: *16th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2023)*. Berlin, Germany: CMS, 2023.

[80] J. Vicent Servera, L. Martino, J. Verrelst, and G. Camps-Valls. "Multi-fidelity Gaussian Process Emulation for Atmospheric Radiative Transfer Models". In: *13th EARSeL Workshop on Imaging Spectroscopy*. EARSL. València, 2023, p. 1.

[81] T. Williams, M. Mahecha, and G. Camps-Valls. "Estimating non-linear persistence for impact assessment in European forests". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2023. Vol. Vol. 25. EGU. Hybrid, 23-28 April 2023, 2023.

[82] J. Adsuara, G. Varando, A. Pérez-Suay, K. Cohrs, E. Díaz, D. Bueso, and G. Camps-Valls. "Characterizing the Earth complex dynamical system through spectral decomposition of kernel transfer operators". In: *Living Planet Symposium*. ESA. 23-27 May 2022, Bonn, Germany, 2022. DOI: https://doi.org/.

[83] M. Anand, L.-b. Sweet, G Camps-Valls, and J. Zscheischler. "Identifying Compound Climate Drivers of Forest Mortality with -VAE". In: *NeurIPS 2022 Workshop-Tackling Climate Change with Machine Learning*. 2022.

[84] M. Anand, G. Camps-Valls, and J. Zscheischler. "Identifying drivers of extreme reductions in carbon uptake of forests with interpretable machine learning". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2022. Vol. Vol. 24. EGU. Hybrid, 23-27 May 2022, 2022. DOI: https://doi.org/.

[85] D. Bueso, M. Piles, E. Székely, and G. Camps-Valls. "Revisiting impacts of MJO on soil moisture: a causality perspective". In: *Authorea Preprints*. Authorea, 2022.

[86] G. Camps-Valls. "Physics-aware Machine learning for Earth observation". In: *NeurIPS 2022 Workshop-Tackling Climate Change with Machine Learning*. 2022.

[87] M. Fernández-Torres, M. Ronco, V. Benson, C. Requena, M. Mahecha, and G. Camps-Valls. "Explaining Deep Learning Models for Earth Surface Forecasting". In: *Living Planet Symposium*. ESA. 23-27 May 2022, Bonn, Germany, 2022. DOI: https://doi.org/.

[88] M. Gonzalez-Calabuig, M. Fernández-Torres, A. Moreno-Martínez, and G. Camps-Valls. "Unsupervised Deep Learning for Spatio-Temporal Earth Data Interpolation and Gap Filling". In: *Living Planet Symposium*. ESA. 23-27 May 2022, Bonn, Germany, 2022. DOI: https://doi.org/.

[89] M. González-Calabuig, J. Cortés-Andrés, M.-Á. Fernández-Torres, and G. Camps-Valls. "Recent Advances in Deep Learning for Spatio-Temporal Drought Monitoring, Forecasting and Model Understanding". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2022. Vol. Vol. 24. EGU. Hybrid, 23-27 May 2022, 2022. DOI: https://doi.org/.

[90] J. Gonzalez, O. Sourdeval, G. Camps-Valls, and J. Quaas. "Machine learning to quantify cloud responses to aerosols from satellite data". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2022. Vol. Vol. 24. EGU. Hybrid, 23-27 May 2022, 2022. DOI: https://doi.org/.

[91] J. M. T. Habas, M. Ronco, M. T. Miranda, E. S. Marco, Q. Wang, M. Piles, J. Muñoz, and G. Camps-Valls. "Inspecting the link between climate and human displacement with Explainable AI and Causal inference". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2022. Vol. Vol. 24. EGU. Hybrid, 23-27 May 2022, 2022. DOI: https://doi.org/.

[92] K. Jeggle, D. Neubauer, G. Camps-Valls, H. Binder, M. Sprenger, and U. Lohmann. "Exploring cirrus cloud microphysical properties using explainable machine learning". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2022. Vol. Vol. 24. EGU. Hybrid, 23-27 May 2022, 2022. DOI: https://doi.org/.

[93] Y. Kang, T. F. Keenan, G. Camps-Valls, P. Gentine, and M. Bassiouni. "Emerging Machine Learning Approaches for Process Understanding in Ecosystem Sciences III Oral". In: *Fall Meeting 2022*. AGU. 2022.

[94] A. Kaps, A. Lauer, G. Camps-Valls, P. Gentine, L. Gómez-Chova, and V. Eyring. "A two-stage machine learning framework using global satellite data of cloud classes for process-oriented model evaluation". In: *Living Planet Symposium*. ESA. 23-27 May 2022, Bonn, Germany, 2022. DOI: https://doi.org/.

[95] A. Kaps, A. Lauer, G. Camps-Valls, P. Gentine, L. Gómez-Chova, and V. Eyring. "A two-stage machine learning framework using global satellite data of cloud classes for process-oriented model evaluation". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2022. Vol. Vol. 24. EGU. Hybrid, 23-27 May 2022, 2022. DOI: https://doi.org/.

[96] S. Kondylatos, I. Prapas, I. Papoutsis, G. Camps-Valls, M. Ronco, M. Fernández-Torres, M. Piles, and N. Carvalhais. "Deep Learning Methods for Daily Wildfire Danger Forecasting". In: *Living Planet Symposium*. ESA. 23-27 May 2022, Bonn, Germany, 2022. DOI: https://doi.org/.

[97] M. Mahecha, F. Gans, G. Camps-Valls, B. Gunnar, G. Kraemer, K. Mora, M. Fernández-Torres, C. RequenA, V. Benson, M. Reichstein, C. Brockmann, and M. Ronco. "DeepExtremes - Deploying Artificial Experiments on High-Resolution Data Cubes for explaining extreme event impacts". In: *Living Planet Symposium*. ESA. 23-27 May 2022, Bonn, Germany, 2022. DOI: https://doi.org/.

[98] D. Malik, J Rivero-Caicedo, J. Verrelst, L. Martino, G. Camps-Valls, B. Berthelot, and J. V. Servera. "Validation of Sentinel-2 Atmospheric Correction Using Radiative Transfer Models Emulators". In: *Living Planet Symposium*. ESA. 23-27 May 2022, Bonn, Germany, 2022. DOI: https://doi.org/.

[99] L. Martínez-Ferrer, A. Moreno-Martínez, J. Kimball, S. Running, N. Clinton, and G. Camps-Valls. "Carbon fluxes estimation at scale: long-term, continuous, high spatial resolution with uncertainties at continental scales". In: *Living Planet Symposium*. ESA. 23-27 May 2022, Bonn, Germany, 2022. DOI: https://doi.org/.

[100] L. Martínez-Ferrer, Á. Moreno-Martínez, J. S. Kimball, S. W. Running, N. Clinton, and G. Camps-Valls. "Carbon fluxes estimation with aleatoric and epistemic uncertainties at high spatial resolution over large areas". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2022. Vol. Vol. 24. EGU. Hybrid, 23-27 May 2022, 2022. DOI: https://doi.org/.

[101] A. Mateo-Sanchis, J. Adsuara, A. Pérez-Suay, M. Piles, J. Muñoz-Marí, and G. Camps-Valls. "Understanding Neural Networks for Crop Yield Estimation". In: *Living Planet Symposium*. ESA. 23-27 May 2022, Bonn, Germany, 2022. DOI: https://doi.org/.

[102] M. Ronco, I. Prapas, S. Kondylatos, I. Papoutsis, G. Camps-Valls, M.-Á. Fernández-Torres, M. Piles Guillem, and N. Carvalhais. "Explainable deep learning for wildfire danger estimation". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2022. Vol. Vol. 24. EGU. Hybrid, 23-27 May 2022, 2022. DOI: https://doi.org/.

[103] D. Tuia, X. Zhu, M. Molinier, and G. Camps-Valls. "Representation learning in remote sensing: from unsupervised, to self-and meta-learning". In: *Living Planet Symposium*. ESA. 23-27 May 2022, Bonn, Germany, 2022. DOI: https://doi.org/.

[104] G. Varando, M. Fernández-Torres, J Muñoz-Marí, and G Camps-Valls. "Learning Causal Representations with Granger PCA". In: *Causal Representation Learning Workshop @UAI'22*. Eindhoven, The Netherlands, 2022. DOI: https://openreview.net/pdf?id=XsTEnaD_Lel. URL: https://openreview.net/pdf?id=XsTEnaD_Lel/.

[105] G. Varando, M.-Á. Fernández-Torres, and G. Camps-Valls. "Learning ENSO-related Principal Modes of Vegetation via a Granger-Causal Variational Autoencoder". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2022. Vol. Vol. 24. EGU. Hybrid, 23-27 May 2022, 2022. DOI: https://doi.org/.

[106] D. Watson-Parris, Y. Rao, D. Olivié, Ø. Seland, P. Nowack, G. Camps-Valls, P. Stier, S. Bouabid, M. Dewey, E. Fons, et al. "ClimateBench: A benchmark for data-driven climate projections". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2022. Vol. Vol. 24. EGU. Hybrid, 23-27 May 2022, 2022. DOI: https://doi.org/.

[107] K. Wickstrøm, J. E. Johnson, S. Løkse, G. Camps-Valls, K. Mikalsen, M. Kampffmeyer, and R. Jenssen. "The Kernelized Taylor Diagram". In: *2022 symposium of the Norwegian AI Society*. 31 May-1 June 2022, Oslo, Norway, 2022. DOI: https://doi.org/. URL: https://www.aisociety.no/nais2022/.

[108] T. Williams, M. Mahecha, and G. Camps-Valls. "Short and long-term persistence in European vegetation". In: *Living Planet Symposium*. ESA. 23-27 May 2022, Bonn, Germany, 2022. DOI: https://doi.org/.

[109] M. Zhang, M. Fernández-Torres, and G Camps-Valls. "Hybrid Recurrent Neural Network for Drought Monitoring". In: *NeurIPS 2022 Workshop-Tackling Climate Change with Machine Learning*. 2022.

[110] D. Bueso, M. Piles, Moreno, G. Camps-Valls, F. Frappart, J.-P. Wigneron, and P. Ciais. "Reconstruction of Seasonal Interaction of Soil Moisture and Tree Water Content Over Boreal Forests". In: *AGU American Geophysical Union*. AGU. New Orleans LA USA Online, 13-17 December 2021, https://www.agu.org/Fall-Meeting, Dec. 2021. URL: https://agu.confex.com/agu/fm21/webprogrampreliminary/Paper805896.html.

[111] Camps-Valls, G., Campos-Taberner, M., Moreno-Martínez, Á., Walther, S., Duveiller, G., Cescatti, A., Running, and S. W. "Unified Vegetation Index for Quantifying the Terrestrial Biosphere". In: *AGU American Geophysical Union*. AGU. New Orleans LA USA Online, 13-17 December 2021, https://www.agu.org/Fall-Meeting, Dec. 2021. URL: https://agu.confex.com/agu/fm21/meetingapp.cgi/Paper/805896.

[112] G Camps Valls. "Deep Learning And Remote Sensing For Urban Sustainability". In: *IGARSS 2021 - 2021 IEEE International Geoscience and Remote Sensing Symposium*. Brussels, Belgium, July 2021.

[113] G. Camps-Valls, D. Svendsen, J Cortés, A Moreno-Martínez, A Pérez-Suay, J Adsuara, I Martin, M Piles, J Muñoz-Marí, and L. Luca Martino. "Physics-Aware Machine Learning For Geosciences And Remote Sensing". In: *IGARSS 2021 - 2021 IEEE International Geoscience and Remote Sensing Symposium*. Brussels, Belgium, July 2021.

[114] G. Camps-Valls, M. Campos-Taberner, A. Moreno-Martinez, S. Walther, G. Duveiller, A. Cescatti, M. Mahecha, J. Muñoz-Marí, F. J. García-Haro, L. Guanter, J. Gamon, M. Jung, M. Reichstein, and S. W. Running. "Generalization of Vegetation Indices for Monitoring the Terrestrial Biosphere". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2021. Vol. Vol. 23. EGU. Online, 19-30 April 2021, 2021. DOI: https://doi.org/10.5194/egusphere-egu21-14263. URL: http://doi.org/10.5194/egusphere-egu21-14263.

[115] D. Chaparro, T. Jagdhuber, M. Piles, D. Entekhabi, F. Jonard, A. Fluhrer, A. Feldman, M. Vall-llossera, and A. Camps. "Global L-Band Vegetation Volume Fraction Estimates for Modeling Vegetation Optical Depth". In: *2021 IEEE International Geoscience and Remote Sensing Symposium IGARSS*. 2021, pp. 6399–6402. DOI: 10.1109/IGARSS47720.2021.9554872.

[116] J. Cortés-Andrés, M.- Fernández-Torres, and G. Camps-Valls. "Location-Aware Convolutional Encoder-Decoder for Drought Detection in Europe". In: *AGU American Geophysical Union*. AGU. New Orleans LA USA Online, 13-17 December 2021, https://www.agu.org/Fall-Meeting, Dec. 2021. URL: https://agu.confex.com/agu/fm21/meetingapp.cgi/Paper/836661.

[117] R Fernandez-Moran, G Camps-Valls, M Piles, W Jean-Pierre, L Xiaojun, W Mengjia, L Fan, A Al-Yaari, and L Gómez-Chova. "Towards A Better Understanding Of Effective Temperature Modelling In The SMOS-IC Retrieval Algorithm". In: *IGARSS 2021 - 2021 IEEE International Geoscience and Remote Sensing Symposium*. Brussels, Belgium, July 2021.

[118] M.- Fernández-Torres, J. E. Johnson, M. Piles, and G. Camps-Valls. "Spatio-Temporal Gaussianization Flows for Extreme Event Detection". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2021. Vol. Vol. 23. EGU. Online, 19-30 April 2021, 2021. DOI: https://doi.org/10.5194/egusphere-egu21-15729. URL: http://doi.org/10.5194/egusphere-egu21-15729.

[119] E Izquierdo-Verdiguier, A Moreno-Martinez, J Adsuara, J Muñoz-Marí, G Camps-Valls, M. Maneta, J Kimball, N Clinton, and S. Running. "Global Upscaling Of The MODIS Land Cover With Google Earth Engineand Landsat Data". In: *IGARSS 2021 - 2021 IEEE International Geoscience and Remote Sensing Symposium*. Brussels, Belgium, July 2021.

[120] J. E. Johnson, M. Piles, V. Laparra, and G. Camps-Valls. "Gaussianization for Multivariate, High-dimensional Earth Observation data Analysis". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2021. Vol. Vol. 23. EGU. Online, 19-30 April 2021, 2021. DOI: https://doi.org/10.5194/egusphere-egu21-14519. URL: http://doi.org/10.5194/egusphere-egu21-14519.

[121] L. Martínez-Ferrer, Moreno-Martínez, J. Muñoz-Marí, E. Izquierdo-Verdiguier, M. Campos-Taberner, J. García-Haro, M. Maneta, N. Robinson, N. Clinton, J. Kimball, S. W. Running, and G. Camps-Valls. "Epistemic and aleatoric uncertainty maps in high resolution biophysical parameter retrieval". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2021. Vol. Vol. 23. EGU. Online, 19-30 April 2021, 2021. DOI: https://doi.org/10.5194/egusphere-egu21-15196. URL: https://doi.org/10.5194/egusphere-egu21-15196.

[122] Moreno-Martínez, J. E. Adsuara, J. Muñoz-Marí, E. Izquierdo-Verdiguier, J. Katge, N. Carvalhais, M. Reichstein, S. W. Running, and G. Camps-Valls. "Upscaling plant traits to ecosystem level: blending local biodiversity, global traits databases, and remote sensing data". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2021. Vol. Vol. 23. EGU. Online, 19-30 April 2021, 2021. DOI: https://doi.org/10.5194/egusphere-egu21-15835. URL: http://doi.org/10.5194/egusphere-egu21-15835.

[123] Moreno, L. Martínez-Ferrer, J. Kimball, M. Jung, M. Reichstein, S. W. Running, N. Clinton, and G. Camps-Valls. "Long-time record and continuous high resolution gross primary productivity estimates at continental scales". In: *AGU American Geophysical Union*. AGU. New Orleans LA USA Online, 13-17 December 2021, https://www.agu.org/Fall-Meeting, Dec. 2021. URL: https://agu.confex.com/agu/fm21/webprogrampreliminary/Paper934068.html.

[124] I. Papoutsis, A. Baglatzi, S. Touloumtzi, M. Reichstein, N. Carvalhais, F. Gans, G. Camps-Valls, M. Piles, T. Kakantousis, J. Dowling, M. Koubarakis, D. Bilidas, D.-A. Pantazi, G. Stamoulis, C. Demange, L.-G. Journel, M. Bianchi, C. Gervasi, A. Rucci, I. Tsampoulatidis, E. Kamateri, T. Habib, A. D. Bolívar, Z. Ntasiou, and A. Paschalis. "deepcube: Explainable AI Pipelines for Big Copernicus data". In: *BiDS Big Data from Space*. Online Everywhere, https://www.bigdatafromspace2021.org/, May 2021. URL: http://cgi.di.uoa.gr/~koubarak/publications/2021/BIDS21_paper54.pdf.

[125] P. Pelucchi, P. Stier, and G. Camps-Valls. "Aerosol Optical Depth Retrievals with Invertible Neural Networks". In: *AGU Fall Meeting 2021*. AGU. 2021. URL: https://scholar.google.es/scholar?hl=es&as_sdt=0%2C5&q=Aerosol+Optical+Depth+Retrievals+with+Invertible+Neural+Networks&btnG=.

[126] M. Piles, A. Mateo-Sanchís, J. Muñoz-Marí, G. Camps-Valls, F. Waldner, F. Rembold, and M. Meroni. "Global Cropland Production Monitoring With Gaussian Processes". In: *IGARSS 2021 - 2021 IEEE International Geoscience and Remote Sensing Symposium*. Brussels, Belgium, July 2021.

[127] M. Piles, R. Fernández-Moran, L. Gómez-Chova, G. Camps-Valls, D. Entekhabi, M. Baur, T. Jagdhuber, J.-P. Wigneron, C. Prigent, and C. Donlon. "The CIMR mission and its unique capabilities for soil moisture sensing". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2021. Vol. Vol. 23. EGU. Online, 19-30 April 2021, 2021. DOI: https://doi.org/10.5194/egusphere-egu21-9484. URL: http://doi.org/10.5194/egusphere-egu21-9484.

[128] G. Portal, M. Vall-llossera, T. Jagdhuber, A. Camps, M. Pablos', and M. Piles. "Incidence Angle Diversity on L-Band Microwave Radiometry and Its Impact on Consistent Soil Moisture Retrievals". In: *2021 IEEE International Geoscience and Remote Sensing Symposium IGARSS*. 2021, pp. 6186–6189. DOI: 10.1109/IGARSS47720.2021.9553132.

[129] I. Prapas, S. Kondylatos, I. Papoutsis, G. Camps-Valls, M. Ronco, M.-Á. Fernández-Torres, M. P. Guillem, and N. Carvalhais. "Deep Learning Methods for Daily Wildfire Danger Forecasting". In: *NeuIPS2021 AI+HADR workshop*. 2021. URL: https://www.hadr.ai/accepted-papers.

[130] J. M. Tárraga, M. Ronco, M. P. Maria Teresa Miranda and, E. S. Marco, J. Muñoz, and G. Camps-Valls. "Climate-Induced Displacement with Explainable Machine Learning Models". In: *AGU American Geophysical Union*. AGU. New Orleans LA USA Online, 13-17 December 2021, https://www.agu.org/Fall-Meeting, Dec. 2021. URL: https://agu.confex.com/agu/fm21/webprogrampreliminary/Paper881761.html.

[131] G. Varando, M.- Fernández-Torres, and G. Camps-Valls. "Learning Granger Causal Feature Representations". In: *AGU American Geophysical Union*. AGU. New Orleans LA USA Online, 13-17 December 2021, https://www.agu.org/Fall-Meeting, Dec. 2021. URL: https://agu.confex.com/agu/fm21/webprogrampreliminary/Paper857866.html.

[132] G. Varando, M.-A. Fernández-Torres, and G. Camps-Valls. "Learning Granger Causal Feature Representations". In: *International Conference on Machine Learning - Workshop on Tackling Climate Change with Machine Learning*. Ed. by ICML. ICML. 2021.

[133] J. Vicent, J. Verrelst, J. Rivera Caicedo, J Muñoz Marí, G. Camps Valls, and B. Berthelot. "Atmospheric Correction Of Satellite Data Based On Emulation Of Atmospheric Radiative Transfer Models". In: *IGARSS 2021 - 2021 IEEE International Geoscience and Remote Sensing Symposium*. Brussels, Belgium, July 2021.

[134] J. Adsuara, A. Perez-Suay, A. Moreno-Martínez, G. Camps-Valls, G. Kraemer, M. Reichstein, and M. Mahecha. "Discovering Differential Equations from Earth Observation Data". In: *IGARSS 2020 - 2020 IEEE International Geoscience and Remote Sensing Symposium*. Waikoloa, Hawaii, USA, July 2020.

[135] J. E. Adsuara, A. Pérez-Suay, A. Moreno-Martínez, A. Mateo-Sanchis, M. Piles, G. Kraemer, M. Reichstein, M. D. Mahecha, and G. Camps-Valls. "Learning ordinary differential equations from remote sensing data". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2020. Vol. Vol. 22. EGU. Vienna, Austria, 3-8 May 2020, 2020.

[136] K. Berger, G. Camps-Valls, J. Verrelst, J.-B. Féret, M. Wocher, and T. Hank. "Spectroscopic retrieval of above-ground crop nitrogen content with a hybrid machine learning regression method". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2020. Vol. Vol. 22. EGU. Vienna, Austria, 3-8 May 2020, 2020.

[137] D. Bueso, M. Piles, and G. Camps-Valls. "Unraveling the time-scale teleconnections between soil moisture and vegetation". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2020. Vol. Vol. 22. EGU. Vienna, Austria, 3-8 May 2020, 2020.

[138] G. Camps-Valls, M. Reichstein, Z. Zhu, and D. Tuia. "Advancing Deep Learning For Earth Sciences: From Hybrid Modeling To Interpretability". In: *IGARSS 2020 - 2020 IEEE International Geoscience and Remote Sensing Symposium*. Waikoloa, Hawaii, USA, July 2020.

[139] G. Camps-Valls, D. H. Svendsen, J. Cortes-Andres, J. Moreno-Martinez, A. Perez-Suay, J. Adsuara, I. Martin, M. Piles, J. Munoz-Mari, and L. Martino. "Living in the Physics – Machine Learning Interplay for Earth Observation". In: *AAAI Fall Series 2020 Symposium on Physics-guided AI for Accelerating Scientific Discovery*. 2020.

[140] G. Camps-Valls. "Living in the Physics and Machine Learning Interplay - An AI agenda with examples for the DTE". In: *The ESA Phi-week 2020*. ESA-ESRIN, Italy, 2020.

[141] G. Camps-Valls and M. Reichstein. "ELLIS Workshop on Machine Learning in Earth and Climate Sciences". In: *https://opc.mfo.de/show*$_{w}$*orkshop?id* $= 3575$. 1-4 March 2020 (a few days before the European lockdown because of COVID). Oberwolfach, Germany, 2020. URL: https://opc.mfo.de/show_workshop?id=3575.

[142] G. Camps-Valls, D. Svendsen, L. Martino, A. Pérez-Suay, M. Piles, and J. Muñoz-Marí. "Advances in Gaussian Processes for Earth Sciences: Physics-aware, interpretability and consistency". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2020. Vol. Vol. 22. EGU. Vienna, Austria, 3-8 May 2020, 2020.

[143] M. P. Diego Bueso and G. Camps-Valls. "Quantifying the impact of 2015-2016 ENSO over global soil and vegetation water content by causality models". In: *AGU Fall Meeting*. Online Everywhere, 2020. URL: https://agu.confex.com/agu/fm20/prelim.cgi/Paper/691707.

[144] V. Eyring, G. Camps-Valls, P. Gentine, M. Reichstein, J. Runge, and M. Schlund. "Machine Learning Based Process-oriented Earth System Model Evaluation". In: *AGU Fall Meeting*. Online Everywhere, 2020. URL: https://agu.confex.com/agu/fm20/prelim.cgi/Paper/719871.

[145] L. M. Ferrer, M. Piles, and G. Camps-Valls. "Multisensor crop yield estimation with machine learning". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2020. Vol. Vol. 22. EGU. Vienna, Austria, 3-8 May 2020, 2020.

[146] E. Izquierdo-Verdiguier, R. Zurita-Milla, Moreno-Martinez, G. Camps-Valls, A. Klisch, C. Atzberger, and S. W. Running. "Gross Primary Production and False Spring: a spatio-temporal analysis". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2020. Vol. Vol. 22. EGU. Vienna, Austria, 3-8 May 2020, 2020.

[147] J. Jakob Runge, T. Xavier-Andoni, M. Bruhns, J. Muñoz-Marí, and G. Camps-Valls. "The Causality for Climate Competition". In: *JMLR: Workshop and Conference Proceedings. 2020 NeurIPS2019 Competition Demonstration Track PMLR Post-proceedings*. 2020.

[148] J. E. Johnson, M. Piles, V. Laparra, and G. Camps-Valls. "Gaussianization of Earth Observation data - Invertible Transformations for Multidimensional Data Analysis". In: *AGU Fall Meeting*. Online Everywhere, 2020. URL: https://agu.confex.com/agu/fm20/prelim.cgi/Paper/730739.

[149] A. P.-S. Jordi Cortes-Andres and G. Camps-Valls. "Physics-aware Nonlinear Modeling and Inference from Earth Data". In: *AGU Fall Meeting*. Online Everywhere, 2020. URL: https://agu.confex.com/agu/fm20/prelim.cgi/Paper/691597.

[150] L. Martínez-Ferrer, A. Moreno, J. Muñoz, E. Izquierdo-Verdiguier, M. Campos-Taberner, J. G. Haro, J. E. Johnson, M. P. Maneta, N. Robinson, N. Clinton, J. Kimball, S. W. Running, and G. Camps-Valls. "High spatial resolution gap free biophysical variables for Earth Observation at continental scales with Google Earth Engine". In: *AGU Fall Meeting*. Online Everywhere, 2020. URL: https://agu.confex.com/agu/fm20/prelim.cgi/Paper/730371.

[151] L. Martino, V. Elvira, and G. Camps-Valls. "Particle group metropolis methods for tracking the leaf area index". In: *45th IEEE International Conference on Acoustics, Speech, and Signal Processing (IEEE ICASSP)*. 4-8 May 2020, Barcelona, 2020. URL: https://cmsworkshops.com/ICASSP2020/Papers/ViewPaper.asp?PaperNum=4023.

[152] L. Martino, D. Svendsen, J. Vicent, and G. Camps-Valls. "Adaptive sequential interpolator using active learning for efficient emulation of complex systems". In: *45th IEEE International Conference on Acoustics, Speech, and Signal Processing (IEEE ICASSP)*. 4-8 May 2020, Barcelona, 2020. URL: https://cmsworkshops.com/ICASSP2020/Papers/ViewPaper.asp?PaperNum=2478.

[153] A. Mateo-Sanchis, M. Piles, J. Amorós-López, J. Muñoz, J. Adsuara, A. Moreno, and G. Camps-Valls. "Satellite and model-based data integration for crop yield estimation and interpretability in Europe". In: *AGU Fall Meeting*. Online Everywhere, 2020. URL: https://agu.confex.com/agu/fm20/prelim.cgi/Paper/719677.

[154] M. Morata, D. Bueso, M. Piles, and G. Camps-Valls. "Understanding Climate Impacts on Vegetation with Gaussian Processes in Granger Causality". In: *NeurIPS AI for Earth Sciences*. Online Everywhere, https://ai4earthscience.github.io/neurips-2020-workshop/, Dec. 2020.

[155] A. Moreno-Martinez, E. Izquierdo-Verdiguier, G. Camps-Valls, M. Maneta, J. Muñoz-Marí, N. Robinson, J. Adsuara, M. Campos, J. García-Haro, A. Perez, N. Clinton, J. Kimball, and S. Running. "Down-Scaling MODIS Vegetation Products With Landsat Gap Filled Surface Reflectance In Google Earth Engine". In: *IGARSS 2020 - 2020 IEEE International Geoscience and Remote Sensing Symposium*. Waikoloa, Hawaii, USA, July 2020.

[156] A. Perez-Suay, J. E. Adsuara, M. Piles, L. Martinez-Ferrer, E. Diaz, A. Moreno-Martinez, and G. Camps-Valls. "Interpretability of Recurrent Neural Networks in Remote Sensing". In: *IGARSS 2020 - 2020 IEEE International Geoscience and Remote Sensing Symposium*. Waikoloa, Hawaii, USA, July 2020.

[157] C. Rajadel, E. Izquierdo, A. Moreno, C. Atzberger, S. Begueria, M. P. Maneta, J. S. Kimball, G. Camps-Valls, and S. W. Running. "Early crop mapping at continental scales derived from reconstructed high spatial resolution images". In: *AGU Fall Meeting*. Online Everywhere, 2020. URL: https://agu.confex.com/agu/fm20/prelim.cgi/Paper/722309.

[158] J. Runge, X.-A. Tibau, M. Bruhns, J. Muñoz Marí, and G. Camps-Valls. "The Causality for Climate Competition". In: *Proceedings of the NeurIPS 2019 Competition and Demonstration Track*. Ed. by H. J. Escalante and R. Hadsell. Vol. 123. Proceedings of Machine Learning Research. Pmlr, 2020, pp. 110–120. URL: https://proceedings.mlr.press/v123/runge20a.html.

[159] R Sauzède, J. E. Johnson, H Claustre, G Camps-Valls, and A. Ruescas. "Estimation of Oceanic Particulate Organic Carbon with Machine Learning". In: vol. 2. Nice, France: Copernicus GmbH, June 2020, pp. 949–956.

[160] J. Tarraga, M. Piles, and G. Camps-Valls. "Learning drivers of climate-induced human migrations with Gaussian processes". In: *NeurIPS ML for Development*. Online Everywhere, https://sites.google.com/view/ml4d, Dec. 2020.

[161] G. Taskin and G. Camps-Valls. "Manifold Learning With High Dimensional Model Representations". In: *IGARSS 2020 - 2020 IEEE International Geoscience and Remote Sensing Symposium*. Waikoloa, Hawaii, USA, July 2020.

[162] C. R. Veronica Nieves and G. Camps-Valls. "Strengthening our knowledge on regional sea level rise through proxy data and machine learning". In: *AGU Fall Meeting*. Online Everywhere, 2020. URL: https://agu.confex.com/agu/fm20/prelim.cgi/Paper/694728.

[163] A. Wolanin, G. Mateo-García, G. Camps-Valls, L. Gómez-Chova, M. Meroni, G. Duveiller, Y. Liangzhi, and L. Guanter. "Explainable deep learning to predict and understand crop yield estimates". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2020. Vol. Vol. 22. EGU. Vienna, Austria, 3-8 May 2020, 2020.

[164] D. Bueso, M. Piles, R. Fernandez-Moran, and G. Camps-Valls. "Revisiting global teleconnection patterns of ENSO over soils and vegetation". In: *Living Planet Symposium*. ESA. 13-17 May 2019, Milano, Italy, 2019.

[165] D. Bueso, M. Piles, and G. Camps-Valls. "Cross-Information Kernel Causality: Revisiting global teleconnections of ENSO over soil moisture and vegetation". In: *Climate Informatics 2019*. Paris, France, 2019.

[166] D. Bueso, M. Piles, and G. Camps-Valls. "Revisiting impacts of MJO on soil moisture: a causality perspective". In: *AGU Fall Meeting*. San Francisco, USA, 2019.

[167] G. Camps-Valls, D. Bueso, and M. Piles. "Learning nonlinear feature representations from spatio-temporal Earth observation data". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2019. Vol. Vol. 21. EGU. 2019.

[168] G. Camps-Valls, E. Diaz, J. Adsuara, M. Piles, A. Moreno, P. Gentine, M. Jung, M. Reichstein, and S. W. Running. "Inferring causal graphs from observational long-term carbon and water fluxes records". In: *AGU Fall Meeting*. San Francisco, USA, 2019.

[169] G. Camps-Valls, J. Muñoz-Marí, E. Diaz, A. Pérez-Suay, A. Moreno, D. Sejdinovic, and J. Runge. "Inferring Causal Relations in Earth Observation: Methods, Applications and a Web-platform". In: *The Phi-week - EO Open Science and Future EO*. ESA-ESRIN, Italy, 2019.

[170] G. Camps-Valls, D. H. Svendsen, A. Pérez-Suay, E. Diaz, L. Martino, Z. Li, and D. Sejdinovic. "Physics-aware Machine Learning in Earth Observation". In: *The Phi-week - EO Open Science and Future EO*. ESA-ESRIN, Italy, 2019.

[171] D. Chaparro, G. Duveiller, M. Piles, M. Vall-llossera, A. Cescatti, A. Camps, and D. Entekhabi. "Mapping Carbon Stocks In Central And South America With Smap Vegetation Optical Depth". In: *IGARSS 2019 - 2019 IEEE International Geoscience and Remote Sensing Symposium*. July 2019, pp. 5449–5452. DOI: https://doi.org/10.1109/IGARSS.2019.8900244.

[172] D. Chaparro, G. Duveiller, M. Piles, M. Vall-llossera, A. Cescatti, A. Camps, and D. Entekhabi. "Mapping Carbon Stocks In Central And South America With Smap Vegetation Optical Depth". In: *IGARSS 2019 - 2019 IEEE International Geoscience and Remote Sensing Symposium*. July 2019, pp. 5449–5452. DOI: https://doi.org/10.1109/IGARSS.2019.8900244.

[173] E. Johnson, V. Laparra, R. Santos, G. Camps-Valls, and J Malo. "Information Theory in Density Destructors". In: *International Conference on Machine Learning - Workshop Invertible Neural Nets and Normalising Flows (INNF)*. Ed. by ICML. ICML. 2019.

[174] J. E. Johnson, V. Laparra, P. J. Nowack, J. Runge, and G. Camps-Valls. "Climate Model Intercomparison with Multivariate Information Theoretic Measures". In: *AGU Fall Meeting*. San Francisco, USA, 2019.

[175] J. E. Johnson, M. Piles, V. Laparra, and G. Camps-Valls. "Multivariate Gaussianization in Earth and Climate Sciences". In: *Climate Informatics 2019*. Paris, France, 2019.

[176] M. Martínez, E. Díaz, A. P. Suay, J. Adsuara, V. Laparra, M. Piles, J. M. Marí, S. W. Running, and G. Camps-Valls. "Convergent cross-mapping for causal Inference in carbon and water fluxes processes". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2019. Vol. Vol. 21. EGU. 2019.

[177] A. Mateo-Sanchis, M. Piles, J. Muñoz-Marí, D. Chaparro, J. Adsuara, A. Pérez-Suay, and C.-V. G. "Statistical learning methods and optical/microwave fusion of time series for crop yield prediction". In: *Living Planet Symposium*. ESA. 13-17 May 2019, Milano, Italy, 2019.

[178] Moreno Martínez, E. Izquierdo Verdiguier, G. Camps-Valls, N. Robinson, L. Martino, M. M. P., B. Allred, and S. W. Running. "Gap filling Sentinel 2 observations in Google Earth Engine: a synergistic Landsat and MODIS Bayesian blending approach". In: *Living Planet Symposium*. ESA. 13-17 May 2019, Milano, Italy, 2019.

[179] A. Moreno, E. Izquierdo, M. P. Maneta, G. Camps-Valls, N. Robinson, J. Munoz, N. Clinton, F. Sedano, and S. Running. "New opportunities for developing high spatial resolution land products derived from gap free Landsat reflectance time series in Google Earth Engine". In: *AGU Fall Meeting*. San Francisco, USA, 2019.

[180] M. Pablos, M. Vall-llossera, M. Piles, A. Camps, C. González-Haro, A. Turiel, C. J. Herbert, D. Chaparro, and G. Portal. "Influence of Quality Filtering Approaches in BEC SMOS L3 Soil Moisture Products". In: *IGARSS 2019 - 2019 IEEE International Geoscience and Remote Sensing Symposium*. July 2019, pp. 6941–6944. DOI: https://doi.org/10.1109/IGARSS.2019.8900273.

[181] M. Pablos, M. Vall-llossera, M. Piles, A. Camps, C. González-Haro, A. Turiel, C. J. Herbert, D. Chaparro, and G. Portal. "Influence of Quality Filtering Approaches in BEC SMOS L3 Soil Moisture Products". In: *IGARSS 2019 - 2019 IEEE International Geoscience and Remote Sensing Symposium*. July 2019, pp. 6941–6944. DOI: https://doi.org/10.1109/IGARSS.2019.8900273.

[182] M. Piles, V. Laparra, J. A. Padrón, D. Bueso, N. Sánchez, González-Zamora, J. Martínez-Fernández, and C.-V. G. "Learning New Ways to Predict Agricultural Drought from Optical and Microwave Satellites". In: *Living Planet Symposium*. ESA. 13-17 May 2019, Milano, Italy, 2019.

[183] E. D. S. Porras, A. P. Suay, V. Laparra, and G. Camps-Valls. "Causal inference in Geosciences with multi-dimensional kernel deviance measures". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2019. Vol. Vol. 21. EGU. 2019.

[184] S. Running, G Camps-Valls, E Diaz, M Piles, J Adsuara, A Moreno, P Gentine, M Jung, and M Reichstein. "Inferring causal graphs from observational long-term carbon and water fluxes records". In: *AGU Fall Meeting Abstracts*. Vol. 2019. 2019, B21G–2408. URL: https://ui.adsabs.harvard.edu/abs/2019AGUFM.B21G2408R/abstract.

[185] A. M. Sanchis, J. Adsuara, M. Piles, A. Perez-Suay, J. Muñoz-Marí, and G. Camps-Valls. "Multisensor distribution regression for crop yield estimation". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2019. Vol. Vol. 21. EGU. 2019.

[186] M. Schlund, V. Eyring, G. Camps-Valls, P. Friedlingstein, P. Gentine, and M. Reichstein. "Reducing uncertainties in projected gross primary production using gradient boosted regression trees". In: *Climate Informatics 2019*. Paris, France, 2019.

[187] I. Teubner, M. Forkel, G. Camps-Valls, M. Jung, D. Miralles, G. Tramontana, R. van der Schalie, M. Vreugdenhil, L. Mösinger, and W. Dorigo. "Using microwave vegetation optical depth for estimating gross primary production". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2019. Vol. Vol. 21. EGU. 2019.

[188] G. Tramontana, M. Jung, T. Keenan, M. Migliavacca, M. Reichstein, J. Ogee, G. Camps-Valls, and D. Papale. "A machine learning based approach for estimating gross carbon dioxide fluxes from eddy covariance net ecosystem exchange measurements". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2019. Vol. Vol. 21. EGU. 2019.

[189] J. Verrelst, E. Johnson, P. Morcillo, J. Vicent, L. M. Ferrer, J. P. Rivera, and G. Camps-Valls. "Emulation for approximating radiative transfer modeling: computational efficiency and sensitivity analysis". In: *The Phi-week - EO Open Science and Future EO*. ESA-ESRIN, Italy, 2019.

[190] S. Walther, G. Duveiller, M. Jung, L. Guanter, A. Cescatti, and G. Camps-Valls. "Remote sensing to track a bipolar response of forests and grasses to variations in soil water content". In: *Living Planet Symposium*. ESA. 13-17 May 2019, Milano, Italy, 2019.

[191] S. Walther, G. Duveiller, M. Jung, L. Guanter, A. Cescatti, and G. Camps-Valls. "Remote sensing to track differential responses of forests and grasses to variations in soil water content". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2019. Vol. Vol. 21. EGU. 2019.

[192] A. Wolanin, L. Guanter, and G. Camps-Valls. "Crop Yield Prediction With Convolutional Neural Networks on Remote Sensing and Meteorological Data". In: *Living Planet Symposium*. ESA. 13-17 May 2019, Milano, Italy, 2019.

[193] A. Wolanin, L. Guanter, G. Camps-Valls, and G. Duveiller. "Extracting important features for crop yield prediction with convolutional neural networks on remote sensing and meteorological data". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2019. Vol. Vol. 21. EGU. 2019.

[194] D. Bueso Acevedo, M. Piles, J. Ballabrera-Poy, and G Camps-Valls. "Extraction of SMOS soil moisture and ocean salinity main features across the Mediterranean region over the last decade". In: *MED 2018*. ESA-ESRIN, Frascati (Rome), Italy, 2018.

[195] D. Bueso, M. Piles, and G. Camps-Valls. "Nonlinear Complex PCA for Spatio-Temporal Analysis of Global Soil Moisture". In: *2018 IEEE International Geoscience and Remote Sensing Symposium*. València, Spain, 2018.

[196] G. Camps-Valls. "Machine Learning for Climate: 15 ways to leave your lover". In: Machine Learning and Climate Workshop 2018 - Oxford, UK, 2018.

[197] G. Camps-Valls. "Unsupervised Deep Feature Learning with Sparse Codes and Gaussianization". In: Climate Informatics 2018, Boulder US, Sept. 2018.

[198] G. Camps-Valls, J. Adsuara, A. P.-S. J. Munoz-Mari, A. Mateo-Sanchis, and M. Piles. "Crop Yield Prediction with Nonlinear Distribution Regression". In: *AGU Fall Meeting*. Washington, USA, 2018.

[199] G. Camps-Valls, L. Gomez-Chova, D. Svendsen, D. Bueso, L. Martino, A. Perez, M. Piles, V. Laparra, and A. Ruescas. "Physics-aware And Explainable Machine Learning". In: *The Phi-week - EO Open Science and Future EO*. ESA-ESRIN, Italy, 2018.

[200] G. Camps-Valls, J. Johnson, V. Laparra, D. Bueso, G. Brandt, N. Fomferra, H. Permana, and M. Mahecha. "Statistical Distillation of the Earth System Data Cube". In: *The Phi-week - EO Open Science and FutureEO*. ESA-ESRIN, Italy, 2018.

[201] D. Chaparro, G. Duveiller, A. Cescatti, M. Piles, M. Vall-llossera, and A. Camps. "Biomass estimation in tropical forests using L, C, and X-band Vegetation Optical Depth". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2018. Vol. Vol. 20. EGU. 2018.

[202] D. Chaparro, G. Duveiller, A. Cescatti, M. Piles, M. Vall-llossera, and A. Camps. "Biomass Estimates From L, C and X-Bands VOD Retrievals in South American Tropical Forests". In: *15th Specialist Meeting on Microwave Radiometry and Remote Sensing of the Environment*. 2018.

[203] D. Chaparro, M. Piles, J. Martínez-Vilalta, M. Vall-Llossera, J. Vayreda, M. Banqué-Casanovas, and A. Camps. "Modelling Forest Decline Using SMOS Soil Moisture and Vegetation Optical Depth". In: *2018 IEEE International Geoscience and Remote Sensing Symposium*. València, Spain, 2018.

[204] D. Chaparro, M. Piles, M. Vall-Llossera, A. Camps, A. G. Konings, D. Entekhabi, and T. Jagdhuber. "L-Band Vegetation Optical Depth for Crop Phenology Monitoring and Crop Yield Assessment". In: *2018 IEEE International Geoscience and Remote Sensing Symposium*. València, Spain, 2018.

[205] E. Díaz, A. Peréz-Suay, V. Laparra, and G. Camps-Valls. "Consistent Regression of Biophysical Parameters with Kernel Methods". In: *2018 IEEE International Geoscience and Remote Sensing Symposium*. València, Spain, 2018.

[206] F. J. García-Haro, M. Campos-Taberner, B. Martínez, S. Sánchez-Ruiz, M. A. Gilabert, G. Camps-Valls, J. Muñoz-Marí, V. Laparra, F. Camacho, J. Sánchez-Zapero, and B. Fuster. "Generation of Global Vegetation Products from Eumetsat AVHRR/MetOp Satellites". In: *2018 IEEE International Geoscience and Remote Sensing Symposium*. València, Spain, 2018.

[207] L. Gomez-Chova, G. Mateo-Garcia, and G. Camps-Valls. "Transferring Knowledge between EO Satellite Missions: Proba-V Cloud Detection through Deep Learning". In: *The Phi-week - EO Open Science and Future EO*. ESA-ESRIN, Italy, 2018.

[208] L. Gomez-Chova, G. Mateo-Garcia, J. Munoz-Mari, and G. Camps-Valls. "Exploiting Time on the Google Earth Engine: Cloud Detection of Landsat-8 Time Series". In: *The Phi-week - EO Open Science and Future EO*. ESA-ESRIN, Italy, 2018.

[209] J. A. P. Hidalgo, A. Pérez-Suay, F. Nar, and G. Camps-Valls. "Nonlinear Cook Distance for Anomalous Change Detection ". In: *2018 IEEE International Geoscience and Remote Sensing Symposium*. València, Spain, 2018.

[210] E. Izquierdo-Verdiguier, A. Moreno, R. Zurita-Milla, G. Camps-Valls, and S. Running. "Gross Primary Production and spring onset: spatial-temporal correlation analysis". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2018. Vol. Vol. 20. EGU. 2018.

[211] E. Izquierdo-Verdiguier, A. Moreno, R. Zurita-Milla, G. Camps-Valls, and S. Running. "Gross Primary Production and spring onset linked by spatio-temporal data analysis". In: *10th International Conference on Ecological Informatics (ICEI)*. Jena, Germany, 2018.

[212] J. Johnson, E. Diaz, V. Laparra, M. Mahecha, D. Miralles, and G. Camps-Valls. "Estimating Information in Earth Data Cubes". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2018. Vol. Vol. 20. EGU. 2018.

[213] J. E. Johnson, V. Laparra, and G. Camps-Valls. "Disentangling Derivatives, Uncertainty and Error in Statistical Models ". In: *2018 IEEE International Geoscience and Remote Sensing Symposium*. València, Spain, 2018.

[214] D. Malmgren-Hansen, V. Laparra, A. A. Nielsen, and G. Camps-Valls. "Transfer Learning with Convolutional Networks for Atmospheric Parameter Retrieval". In: *2018 IEEE International Geoscience and Remote Sensing Symposium*. València, Spain, 2018.

[215] A. M. Martinez, G. Camps-Valls, J. Kattge, N. Carvalhais, M. Reichstein, E. Izquierdo, D. H. Svendsen, and S. W. Running. "A general framework for global mapping of plant traits with operational satellites and climatological data". In: *10th International Conference on Ecological Informatics (ICEI)*. Jena, Germany, 2018.

[216] L. Martino, V. Elvira, and G. Camps-Valls. "Distributed Particle Metropolis-Hastings schemes". In: *IEEE Statistical Signal Processing Workshop (SSP)*. Freiburg, Germany, 2018.

[217] A. Mateo-Sanchis, J. Muñoz-Marí, M. Campos-Taberner, J. García-Haro, and G. Camps-Valls. "Gap Filling of Biophysical Parameter Time Series with Multi-Output Gaussian Processes ". In: *2018 IEEE International Geoscience and Remote Sensing Symposium*. València, Spain, 2018.

[218] A. Moreno, G. Camps-Valls, J. Kattge, M. Reichstein, and S. Running. "Refining Maximum Light Use Efficiency for Land Carbon Models Using Satellite Data and Climatology". In: *European Geosciences Union, EGU General Assembly 2018*. Vienna, Austria, May 2018.

[219] A. Moreno, M. P. Maneta, G. Camps-Valls, L. Martino, N. Robinson, B. W. Allred, and S. W. Running. "Gap fillingof Landsat reflectance time series using Google Earth Engine". In: *AGU Fall Meeting*. Washington, USA, 2018.

[220] A. Moreno, M. Maneta, G. Camps-Valls, L. Matino, N. Robinson, B. Allred, and S. Running. "Interpolation and Gap Filling of Landsat Reflectance Time Series". In: *2018 IEEE International Geoscience and Remote Sensing Symposium*. València, Spain, 2018.

[221] F. Nar, A. Perez-Suay, J. A. Padron, and G. Camps-Valls. "Randomized RX for Target Detection". In: *2018 IEEE International Geoscience and Remote Sensing Symposium*. València, Spain, 2018.

[222] F. Nar, E. Yilmaz, and G. Camps-Valls. "Sparsity-Driven Digital Terrain Model Extraction". In: *2018 IEEE International Geoscience and Remote Sensing Symposium*. València, Spain, 2018.

[223] M. Piles, W. Dorigo, R. van der Schalie, A. Gruber, J. Muñoz-Marí, G. Camps-Valls, and R. de Jeu. "Assessing memory effects in modeled and remotely sensed soil moisture products". In: *ESA CCI Soil Moisture Workshop*. Vienna, Austria, 2018.

[224] M. Piles, R. V. D. Schalie, A. Gruber, G. Camps-Valls, R. Parinussa, W. Dorigo, and R. D. Jeu. "Global Estimation of Soil Moisture Persistence with L and C-Band Microwave Sensors". In: *2018 IEEE International Geoscience and Remote Sensing Symposium*. València, Spain, 2018.

[225] G. Portal, M. Vall-Llossera, M. Piles, A. Camps, D. Chaparro, M. Pablos, L. Rossato, and K. Abouch. "Microwave And Optical Data Fusion for Global Mapping of Soil Moisture at High Resolution ". In: *2018 IEEE International Geoscience and Remote Sensing Symposium*. València, Spain, 2018.

[226] L. Rossato, M. Vall-llossera, A. Camps, D. Chaparro, M. Piles, J. A. Marengo, and A. G. S. S. Souza. "Impact of Soil Moisture in Agriculture in the Brazilian Semiarid Using Water Balance and SMOS Satellite Data ". In: *15th Specialist Meeting on Microwave Radiometry and Remote Sensing of the Environment*. 2018.

[227] A. B. Ruescas, G. Mateo-Garcia, G. Camps-Valls, and M. Hieronymi. "Retrieval Of Case 2 Water Quality Parameters with Machine Learning". In: *2018 IEEE International Geoscience and Remote Sensing Symposium*. València, Spain, 2018.

[228] A. Ruescas, J. Munoz-Mari, L. Gomez-Chova, G. Mateo-Garcia, E. Izquiedo, M. Campos, and G. Camps-Valls. "HyperLabelMe: Benchmarking Image Classifiers". In: *The Phi-week - EO Open Science and Future EO*. ESA-ESRIN, Italy, 2018.

[229] J. Runge, J. Munoz-Marí, and G. Camps-Valls. "Causal discovery in Earth system science: State-of-the-art and a new Causality Challenge platform". In: *AGU Fall Meeting*. Washington, USA, 2018.

[230] D. H. Svendsen, L. Martino, J. Vicent, and G. Camps-Valls. "Multioutput Automatic Emulator for Radiative Transfer Models ". In: *2018 IEEE International Geoscience and Remote Sensing Symposium*. València, Spain, 2018.

[231] D. H. Svendsen, P. Morales-Álvarez, R. Molina, and G. Camps-Valls. "Deep Gaussian Processes for Geophysical Parameter Retrieval". In: *2018 IEEE International Geoscience and Remote Sensing Symposium*. València, Spain, 2018.

[232] I. Teubner, M. Forkel, M. Jung, Y. Liu, D. Miralles, R. Parinussa, R. van der Schalie, M. Vreugdenhil, C. Schwalm, G. Tramontana, G. Camps-Valls, and W. Dorigo. "Analyzing Microwave Vegetation Optical Depth in Relation to Gross Primary Production". In: *EGU General Assembly, Geophysical Research Abstracts*. Ed. by E. G. A. 2018. Vol. Vol. 20. EGU. 2018.

[233] D. Tuia, B. Kellenberger, A. Pérez-Suay, and G. Camps-Valls. "A Deep Network Approach to Multitemporal Cloud Detection ". In: *2018 IEEE International Geoscience and Remote Sensing Symposium*. València, Spain, 2018.

[234] J. Vicent, J. Verrelst, J. P. Rivera-Caicedo, N. Sabater, J. Muñoz-Marí, G. Camps-Vallas, and J. Moreno. "Statistical Learning for End-to-End simulator". In: *2018 IEEE International Geoscience and Remote Sensing Symposium*. València, Spain, 2018.

[235] M. Campos-Taberner, F. Garcia-Haro, F. Nutini, G. Grau-Muedra, G. Camps-Valls, L. Busetto, D. Katsantonis, D. Stavrakoudis, C. Minakou, B. Martinez, S. Sanchez-Ruiz, M. Gilabert, L. Gatti, M. Barbieri, F. Collivignarelli, F. Holecz, D. Stroppiana, and M. Boschetti. "Generation of multisource LAI time series for crop assessment". In: *5th International Symposium – Recent Advances in Quantitative Remote Sensing*. Torrent, Spain, 2017.

[236] G. Camps-Valls, L. Gomez-Chova, G. Mateo, V. Laparra, A. Perez-Suay, and J. Munoz-Mari. "Large Scale Gaussian Processes for Atmospheric Parameter Retrieval and Cloud Screening". In: *American Geophysical Union (AGU) Fall meeting 2017*. New Orleans, USA, 11-15 December 2017, 2017.

[237] G. Camps-Valls, D. Svendsen, M. Campos, L. Martino, and D. Luengo. "Vegetation Monitoring with Gaussian Processes and Latent Force Models". In: *European Geosciences Union General Assembly 2017*. Vienna, Austria, 23-28 April 2017, 2017.

[238] G. Camps-Valls, D. Svendsen, L. Martino, J. Munoz-Mari, V. Laparra, M. Campos-Taberner, and D. Luengo. "Physics-Aware Gaussian Processes for Earth Observation". In: *Scandinavian Conference on Image Analysis (SCIA)*. Tromsø, Norway, 2017.

[239] G. Camps-Valls, J. Verrelst, L. Martino, and J. Vicent. "Advanced Machine Learning Emulators of Radiative Transfer Models". In: *American Geophysical Union (AGU) Fall meeting 2017*. New Orleans, USA, 11-15 December 2017, 2017.

[240] D. Chaparro, M. Vall-llossera, A. Camps, M. Piles, A. G. Konings, and D. Entekhabi. "SMAP Multi-Temporal vegetation optical depth retrieval as an indicator of crop yield trends and crop composition". In: *2017 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*. July 2017, pp. 4362–4365. DOI: https://doi.org/10.1109/IGARSS.2017.8127967.

[241] A. Descals, L. Alonso, and G. Camps-Valls. "Predicting year of plantation with hyperspectral and lidar data". In: *2017 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*. July 2017, pp. 1780–1783. DOI: https://doi.org/10.1109/IGARSS.2017.8127320.

[242] L. Gómez-Chova, G. Mateo-García, J. Muñoz-Marí, and G. Camps-Valls. "Cloud detection machine learning algorithms for PROBA-V". In: *2017 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*. July 2017, pp. 2251–2254. DOI: https://doi.org/10.1109/IGARSS.2017.8127437.

[243] F. Garcia-Haro, M. Campos-Taberner, F. Camacho, B. Martinez, J. Sanchez-Zapero, G. Camps-Valls, S. Sanchez-Ruiz, and M. Gilabert. "The geostationary and polar orbit LSA SAF vegetation products". In: *5th International Symposium – Recent Advances in Quantitative Remote Sensing*. Torrent, Spain, 2017.

[244] J. Garcia-Sobrino, J. Serra-Sagrista, V. Laparra, X. Calbet, and G. Camps-Valls. "Statistical Retrieval of Temperature and Moisture Atmospheric Profiles Benefits from Spatial-Spectral Image Compression". In: *2017 EUMETSAT Meteorological Satellite Conference*. Rome, Italy, 2017. URL: http://isp.uv.es/papers/GarciaSobrino17eum.pdf.

[245] L. Gomez-Chova, G. Mateo-Garcia, J. Munoz-Mari, and G. Camps-Valls. "Advances in statistical cloud screening: the Proba-V case study". In: *5th International Symposium – Recent Advances in Quantitative Remote Sensing*. Torrent, Spain, 2017.

[246] K. Ichii, M. Jung, G. Tramontana, G. Camps-Valls, C. R Schwalm, M. Kondo, D. Papale, M. Reichstein, U. Weber, and Y. Yanagi. "FLUXCOM remote sensing data based CO2 flux products: overview and synthesis". In: *JpGU/AGU Joint Meeting*. Makuhari Messe, Japan, 2017.

[247] S. Koirala, M. Jung, M. Reichstein, I. E. de Graaf, G. Camps-Valls, K. Ichii, D. Papale, B. Raduly, C. Schwalm, G. Tramontana, and N. Carvalhais. "Global distribution of groundwater-vegetation spatial covariation". In: *European Geosciences Union General Assembly 2017*. Vienna, Austria, 23-28 April 2017, 2017.

[248] V. Laparra, J. Muñoz-Marí, L. Gómez-Chova, X. Calbet, and G. Camps-Valls. "Nonlinear statistical retrieval of surface emissivity from IASI data". In: *2017 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*. July 2017, pp. 5450–5453. DOI: https://doi.org/10.1109/IGARSS.2017.8128237. URL: http://isp.uv.es/papers/Laparra17igarss.pdf.

[249] V. Laparra, J. Munoz-Mari, L. Gomez, X. Calbet, and G. Camps-Valls. "Nonlinear statistical retrieval of land surface emissivity from infrared sounding data". In: *2017 EUMETSAT Meteorological Satellite Conference*. Rome, Italy, 2017.

[250] D. Malmgren-Hansen, V. Laparra, A. A. Nielsen, and G. Camps-Valls. "Spatial noise-aware temperature retrieval from infrared sounder data". In: *2017 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*. July 2017, pp. 17–20. DOI: https://doi.org/10.1109/IGARSS.2017.8126882.

[251] D. Malmgren-Hansen, V. Laparra, A. Nielsen, X. Calbet, and G. Camps-Valls. "Temperature Retrieval with Spatial Noise-aware dimensionality reduction". In: *2017 EUMETSAT Meteorological Satellite Conference*. Rome, Italy, 2017.

[252] L. Martino, V. Elvira, and G. Camps-Valls. "Group Metropolis Sampling". In: *25th European Signal Processing Conference (EUSIPCO)*. Kos, Greece, Aug. 2017.

[253] L. Martino, V. Elvira, and G. Camps-Valls. "Recycling Gibbs Sampling". In: *25th European Signal Processing Conference (EUSIPCO)*. Kos, Greece, Aug. 2017.

[254] L. Martino, D. Luengo, and G. Camps-Valls. "Latent Force Models for Model-Data Integration in Vegetation Monitoring". In: *10th EARSeL SIG Imaging Spectroscopy Workshop*. 19-21 April 2017, University of Zurich (Switzerland), 2017.

[255] L. Martino, L V., and G. Camps-Valls. "Probabilistic Cross-Validation Estimators for Gaussian Process Regression". In: *25th European Signal Processing Conference (EUSIPCO)*. Kos, Greece, Aug. 2017.

[256] L. Martino, J. Vicent, and G. Camps-Valls. "Automatic Emulation by Adaptive Relevance Vector Machines". In: *Scandinavian Conference on Image Analysis (SCIA)*. Tromsø, Norway, 2017.

[257] L. Martino, J. Vicent, and G. Camps-Valls. "Automatic emulator and optimized look-up table generation for radiative transfer models". In: *2017 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*. July 2017, pp. 1457–1460. DOI: https://doi.org/10.1109/IGARSS.2017.8127241.

[258] G. Mateo-García, L. Gómez-Chova, and G. Camps-Valls. "Convolutional neural networks for multispectral image cloud masking". In: *2017 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*. July 2017, pp. 2255–2258. DOI: https://doi.org/10.1109/IGARSS.2017.8127438.

[259] P. Morales, A. Pérez-Suay, R. Molina, and G. Camps-Valls. "Efficient remote sensing image classification with Gaussian processes and Fourier features". In: *2017 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*. July 2017, pp. 2227–2230. DOI: https://doi.org/10.1109/IGARSS.2017.8127431.

[260] A. Moreno-Martinez, G. Camps-Valls, N. Carvalhais, J. Kattge, N. Robinson, M. Reichstein, B. Allred, and S. Running. "Mapping wood density globally using remote sensing and climatological data". In: *American Geophysical Union (AGU) Fall meeting 2017*. New Orleans, USA, 11-15 December 2017, 2017.

[261] A. Pablo Morales, A. Perez-Suay, R. Molina, G. Camps-Valls, and A. K. Katsaggelos. "Passive millimeter wave image classification with large scale Gaussian processes". In: *2017 IEEE International Conference on Image Processing*. Beijing, China, 2017.

[262] A. Pérez-Suay and G. Camps-Valls. "Causal inference in geosciences with kernel sensitivity maps". In: *2017 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*. July 2017, pp. 763–766. DOI: https://doi.org/10.1109/IGARSS.2017.8127064.

[263] A. Perez-Suay, J. Amoros-Lopez, L. Gomez-Chova, V. Laparra, J. Munoz-Mari, D. Just, and G. Camps-Valls. "Fast Cloud Detection over Landmarks in MSG/SEVIRI Image Time Series". In: *2017 EUMETSAT Meteorological Satellite Conference*. Rome, Italy, 2017.

[264] A. Perez-Suay, V. Laparra, G. Mateo-Garcia, J. Munoz-Mari, L. Gomez-Chova, and G. Camps-Valls. "Fair Kernel Learning". In: *European Conference on Machine Learning (ECML)*. Skopje, Macedonia, 2017.

[265] M. Piles, G. Camps-Valls, D. Chaparro, D. Entekhabi, A. G. Konings, and T. Jagdhuber. "Remote sensing of vegetation dynamics in agro-ecosystems using SMAP vegetation optical depth and optical vegetation indices". In: *2017 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*. July 2017, pp. 4346–4349. DOI: https://doi.org/10.1109/IGARSS.2017.8127964.

[266] G. Portal, M. Vall-llossera, M. Piles, A. Camps, D. Chaparro, M. Pablos, and L. Rossato. "A spatially consistent downscaling approach for SMOS using an adaptive moving window". In: *2017 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*. July 2017, pp. 4151–4153. DOI: https://doi.org/10.1109/IGARSS.2017.8127915.

[267] A. B. Ruescas, M. Hieronymi, S. Koponen, K. Kallio, and G. Camps-Valls. "Retrieval of coloured dissolved organic matter with machine learning methods". In: *2017 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*. July 2017, pp. 2187–2190. DOI: https://doi.org/10.1109/IGARSS.2017.8127421.

[268] D. H. Svendsen, L. Martino, M. Campos-Taberner, and G. Camps-Valls. "Joint Gaussian processes for inverse modeling". In: *2017 IEEE International Geoscience and Remote Sensing Symposium (IGARSS)*. July 2017, pp. 3980–3983. DOI: https://doi.org/10.1109/IGARSS.2017.8127872.

[269] D. Svendsen, L. Martino, L. Gomez-Chova, J. Munoz-Mari, J. Garcia-Haro, M. Campos-Taberner, and G. Camps-Valls. "Advances in statistical biophysical parameter retrieval". In: *5th International Symposium – Recent Advances in Quantitative Remote Sensing*. Torrent, Spain, 2017.

[270] G. Tramontana, M. Jung, C. R. Schwalm, K. Ichii, G. Camps-Valls, B. Ráduly, M. Reichstein, M. A. Arain, A. Cescatti, G. Kiely, L. Merbold, P. Serrano-Ortiz, S. Sickert, S. Wolf, and D. Papale. "Predicting carbon dioxide and energy fluxes with empirical approaches in FLUXNET". In: *European Geosciences Union General Assembly 2017*. Vienna, Austria, 23-28 April 2017, 2017.

[271] D. Tuia and G. Camps-Valls. "Is My Method Robust To Acquisition Conditions? An Empirical Manifold alignment Perspective". In: *10th EARSeL SIG Imaging Spectroscopy Workshop*. 19-21 April 2017, University of Zurich (Switzerland), 2017.

[272] J. Verrelst, J. Rivera, A. Gitelson, J. Delegido, S. Wittenberghe, J. Moreno, and G. Camps-Valls. "Automated Spectral Band Selection for Optimized Vegetation Properties Retrieval Using Gaussian Processes Regression". In: *10th EARSeL SIG Imaging Spectroscopy Workshop*. 19-21 April 2017, University of Zurich (Switzerland), 2017.

[273] J. Verrelst, N. Sabater, J. Rivera, J. Munoz-Mari, J. Vicent, J. Moreno, and G. Camps-Valls. "Emulation of Radiative Transfer Models: New Opportunities for Spectroscopy Data Processing". In: *10th EARSeL SIG Imaging Spectroscopy Workshop*. 19-21 April 2017, University of Zurich (Switzerland), 2017.

[274] S. Walther, L. Guanter, G. Duveiller, A. Cescatti, M. Jung, P. Koehler, and G. Camps-Valls. "An intercomparison of SIF vs EO-based vegetation parameters at global scale: what else can we learn about photosynthesis in the temporal dimension?" In: *ESA Workshop on Remote Sensing of Fluoroscence, Photosynthesis and Vegetation Status*. 17-19 January 2017 at ESA-ESRIN, Frascati, Italy, 2017.

[275] G. Camps-Valls. "Monitoring Vegetation From Space with Gaussian Processes and Latent Force Models". In: *9th International Conference on Computational and Methodological Statistics, CMStatistics*. Sevilla, Spain, Dec. 2016.

[276] D. Luengo-Garcia, M. Campos-Taberner, and G. Camps-Valls. "Latent Force Models for Earth Observation Time Series Prediction". In: *2016 IEEE International Workshop on Machine Learning for Signal Processing (MLSP 2016)*. Salerno, Italy, Sept. 2016. URL: http://mlsp2016.conwiz.dk/home.htm.

[277] M. Reichstein, M. Jung, P. Bodesheim, M. Mahecha, F. Gans, E. Rodner, G. Camps-Valls, D. Papaple, G. Tramontana, J. Denzler, and D. Baldocchi. "Potential of new machine learning methods for understanding long-term interannual variability of carbon and energy fluxes and states from site to global scale". In: *AGU Fall Meeting*. 2016. URL: https://agu.confex.com/agu/fm16/meetingapp.cgi/Paper/133025.

[278] S. Walther, L. Guanter, M. Jung, C. Frankenberg, Y. Sun, M. Forkel, Y. Zhang, G. Duvellier, A. Cescatti, G. Camps-Valls, and P. Köhler. "Space-borne Chlorophyll Fluorescence, Greenness, Vegetation Models and Interannual Variability of Photosynthetic Activity: Spatio-temporal Patterns, Mechanisms, and Environmental Sensitivities". In: *AGU Fall Meeting*. 2016. URL: https://agu.confex.com/agu/fm16/meetingapp.cgi/Paper/179882.

[279] K. Blix, G. Camps-Valls, and R. Jenssen. "Sensitivity analysis of Gaussian processes for oceanic chlorophyll prediction". In: *Geoscience and Remote Sensing Symposium (IGARSS), 2015 IEEE International*. July 2015, pp. 996–999. DOI: http://dx.doi.org/10.1109/IGARSS.2015.7325936. URL: http://www.igarss2015.org/.

[280] K. Blix, G. Camps-Valls, and R. Jenssen. "Sensitivity analysis of Gaussian processes for oceanic chlorophyll prediction". In: *Geoscience and Remote Sensing Symposium (IGARSS), 2015 IEEE International*. July 2015, pp. 996–999. DOI: http://dx.doi.org/10.1109/IGARSS.2015.7325936.

[281] M. Campos-Taberner, F. García-Haro, A. Moreno, M. Gilabert, B. Martínez, S. Sánchez-Ruiz, and G. Camps-Valls. "Development of an Earth Observation processing chain for crop biophysical parameters at local scale". In: *Geoscience and Remote Sensing Symposium (IGARSS), 2015 IEEE International*. July 2015, pp. 17–20. DOI: http://dx.doi.org/10.1109/IGARSS.2015.7325686. URL: http://www.igarss2015.org/.

[282] M. Campos-Taberner, A. Romero, C. Gatta, and G. Camps-Valls. "Shared feature representations of LiDAR and optical images: Trading sparsity for semantic discrimination". In: *Geoscience and Remote Sensing Symposium (IGARSS), 2015 IEEE International*. July 2015, pp. 4169–4172. DOI: http://dx.doi.org/10.1109/IGARSS.2015.7326744. URL: http://www.igarss2015.org/.

[283] M. Campos-Taberner, A. Romero, C. Gatta, and G. Camps-Valls. "Shared feature representations of LiDAR and optical images: Trading sparsity for semantic discrimination". In: *Geoscience and Remote Sensing Symposium (IGARSS), 2015 IEEE International*. July 2015, pp. 4169–4172. DOI: http://dx.doi.org/10.1109/IGARSS.2015.7326744.

[284] G. Camps-Valls, M. Jung, K. Ichii, D. Papale, G. Tramontana, P. Bodesheim, C. Schwalm, J. Zscheischler, M. Mahecha, and M. Reichstein. "Ranking drivers of global carbon and energy fluxes over land". In: *Geoscience and Remote Sensing Symposium (IGARSS), 2015 IEEE International*. July 2015, pp. 4416–4419. DOI: http://dx.doi.org/10.1109/IGARSS.2015.7326806. URL: http://www.igarss2015.org/.

[285] G. Camps-Valls, M. Jung, K. Ichii, D. Papale, G. Tramontana, P. Bodesheim, C. Schwalm, J. Zscheischler, M. Mahecha, and M. Reichstein. "Ranking drivers of global carbon and energy fluxes over land". In: *Geoscience and Remote Sensing Symposium (IGARSS), 2015 IEEE International*. July 2015, pp. 4416–4419. DOI: http://dx.doi.org/10.1109/IGARSS.2015.7326806.

[286] L. Gomez-Chova, J. Amoros-Lopez, A. Ruiz-Verdu, J. Munoz-Marí, and G. Camps-Valls. "Operational cloud detection in Sentinel-2 image time series". In: *Geoscience and Remote Sensing Symposium (IGARSS), 2015 IEEE International*. July 2015, pp. 17–20. DOI: http://dx.doi.org/10.1109/IGARSS.2015.7325686. URL: http://www.igarss2015.org/.

[287] D. Gonzalez, G. Camps-Valls, and D. Tuia. "Weakly supervised alignment of multisensor images". In: *Geoscience and Remote Sensing Symposium (IGARSS), 2015 IEEE International*. July 2015, pp. 2588–2591. DOI: http://dx.doi.org/10.1109/IGARSS.2015.7326341. URL: http://www.igarss2015.org/.

[288] D. Gonzalez, G. Camps-Valls, and D. Tuia. "Weakly supervised alignment of multisensor images". In: *Geoscience and Remote Sensing Symposium (IGARSS), 2015 IEEE International*. July 2015, pp. 2588–2591. DOI: http://dx.doi.org/10.1109/IGARSS.2015.7326341.

[289] V. Laparra, D. Gonzalez, D. Tuia, and G. Camps-Valls. "Large-scale random features for kernel regression". In: *Geoscience and Remote Sensing Symposium (IGARSS), 2015 IEEE International*. July 2015, pp. 17–20. DOI: http://dx.doi.org/10.1109/IGARSS.2015.7325686. URL: http://www.igarss2015.org/.

[290] V. Laparra, D. Gonzalez, D. Tuia, and G. Camps-Valls. "Large-scale random features for kernel regression". In: *Geoscience and Remote Sensing Symposium (IGARSS), 2015 IEEE International*. July 2015, pp. 17–20. DOI: http://dx.doi.org/10.1109/IGARSS.2015.7325686.

[291] N. W. Longbotham, F. Pacifici, S. Malitz, W. Baugh, and G. Camps-Valls. "Measuring the Spatial and Spectral Performance of WorldView-3". In: *Fourier Transform Spectroscopy and Hyperspectral Imaging and Sounding of the Environment*. Optical Society of America, 2015, HW3B.2. DOI: http://dx.doi.org/10.1364/HISE.2015.HW3B.2. URL: http://www.osapublishing.org/abstract.cfm?URI=HISE-2015-HW3B.2.

[292] J. Munoz-Marí, J. Verrelst, M. Lazaro-Gredilla, and G. Camps-Valls. "Biophysical parameter retrieval with warped Gaussian processes". In: *Geoscience and Remote Sensing Symposium (IGARSS), 2015 IEEE International*. July 2015, pp. 17–20. DOI: http://dx.doi.org/10.1109/IGARSS.2015.7325686. URL: http://www.igarss2015.org/.

[293] J. Verrelst, J. Rivera, S. Dethier, J. Muñoz, G. Camps-Valls, and J. Moreno. "Advanced dimensionality reduction and active learning for imaging spectroscopy statistical retrieval". In: *9th EARSeL SIG Imaging Spectroscopy workshop*. 14-16 April 2015, Trier University, Germany, July 2015. DOI: http://dx.doi.org/. URL: http://www.earsel2015.com/.

[294] J. Verrelst, J. Rivera, J. Gomez-Dans, G. Camps-Valls, and J. Moreno. "Replacing radiative transfer models by surrogate approximations through machine learning". In: *Geoscience and Remote Sensing Symposium (IGARSS), 2015 IEEE International*. July 2015, pp. 633–636. DOI: http://dx.doi.org/10.1109/IGARSS.2015.7325843. URL: http://www.igarss2015.org/.

[295] J. Verrelst, J. Rivera, J. Gomez-Dans, G. Camps-Valls, and J. Moreno. "Replacing radiative transfer models by surrogate approximations through machine learning". In: *Geoscience and Remote Sensing Symposium (IGARSS), 2015 IEEE International*. July 2015, pp. 633–636. DOI: http://dx.doi.org/10.1109/IGARSS.2015.7325843.

[296] N. Amrani, V. Laparra, G. Camps-Valls, J. Serra-Sagrista, and J. Malo. "Lossless coding of hyperspectral images with principal polynomial analysis". In: 0. 2014, pp. 4023–4026. DOI: http://dx.doi.org/10.1109/ICIP.2014.7025817. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-84949928772&partnerID=40&md5=ae2a9a141073e8d69b39f4b36a1b57aa.

[297] N. Amrani, V. Laparra, G. Camps-Valls, J. Serra-Sagristà, and J. Malo. "Lossless coding of hyperspectral images with Principal Polynomial Analysis". In: *IEEE International Conference on Image Processing, ICIP14*. Oct. 2014. URL: https://www.google.es/?gfe_rd=cr&ei=EOcyWPrbGIvY8gfZjaXoDw#q=IEEE+International+Conference+on+Image+Processing%2C+ICIP14.

[298] M. Campos-Taberner, F. J. García-Haro, F. Camacho, G. Camps-Valls, M. A. Gilabert, B. Martínez, A. Moreno, S. Sánchez, and J. Meliá. "Prototyping of physically based methods to retrieve leaf area index and canopy water content from satellite data". In: Torrent, València, 2014. URL: http://ipl.uv.es/raqrs4/.

[299] N. L. G. Camps-Valls. "A family of kernel anomaly change detectors". In: Lausanne, Switzerland, June 2014. URL: http://www.magellium.com/blog/whisper-2014-6th-workshop-on-hyperspectral-image-and-signal-processing-evolution-in-remote-sensing-2/.

[300] G. Camps, V. Laparra, J. Muñoz, L. Gómez, X. Calbet, T. Hultberg, and T. August. "Advances in Non-linear Retrievals for IASI and MTG-IRS Hyperspectral Infrared Sounders". In: *EUMETSAT Meteorological Satellite Conference*. Geneva, Switzerland, Sept. 2014, pp. 22–26. URL: http://www.eumetsat.int/website/home/News/ConferencesandEvents/DAT_2076129.html.

[301] L. Gómez-Chova, J. Amorós-López, J. Muñoz-Marí, and G. Camps-Valls. "Cloud masking of multitemporal remote sensing images". In: vol. 9244. 0. 2014. DOI: http://dx.doi.org/10.1117/12.2067193. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-84923064100&partnerID=40&md5=38a1b04cdda35378b58b817f40aaaf4d.

[302] L. Gómez-Chova, J. Amorós-López, A. Ruiz-Verdú, E. Izquierdo, J. Muñoz-Marí, and G. Camps-Valls. "Sentinel-2 image time series: Cloud detection in the Cloud". In: *SENTINEL-for Science Workshop 2014*. Vol. 2. ESA-ESRIN, Frascati, Italy, on the 20th, 21st and 22nd, May 2014. URL: http://seom.esa.int/S2forScience2014/.

[303] J. Garcia-Sobrino, I. Blanes, V. Laparra, G. Camps-Valls, and J. Serra-Sagristà. "Impact of near-lossless compression of IASI L1C data on statistical retrieval of atmospheric profiles". In: 4th International Workshop on On-Board Payload Data Compression (OBPDC), Oct. 2014. URL: http://esaconferencebureau.com/2014-events/14c13/introduction.

[304] J. Jacobs, G. Thoonen, D. Tuia, G. Camps-Valls, P. Kempeneers, and P. Scheunders. "Spectral adaptation of hyperspectral flight lines using VHR contextual information". In: 0. 2014, pp. 2953–2956. DOI: http://dx.doi.org/10.1109/IGARSS.2014.6947096. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-84911413893&partnerID=40&md5=0c188c8b56e3476eb5bb10b9463a8edb.

[305] M. Jung, K. Ichii, G. Camps-Valls, D. Papale, G. Tramontana, S. Sickert, C. Schwalm, and M. Reichstein. "An ensemble of global high-resolution products of energy fluxes over land". In: *7th International Scientific Conference on the Global Water and Energy Cycle, GEWEX 2014*. The Hague, the Netherlands, July 2014, pp. 14–17. URL: http://www.gewex.org/gewex-content/files_mf/1432213682Aug2014.pdf.

[306] V. Laparra, J. Malo, and G. Camps-Valls. "Dimensionality Reduction via Regression on Hyperspectral Infrared Sounding Data". In: 2014, Lausanne, Switzerland, June 2014. URL: http://www.magellium.com/blog/whisper-2014-6th-workshop-on-hyperspectral-image-and-signal-processing-evolution-in-remote-sensing-2/.

[307] N. Longbotham, F. Pacifici, B. Baugh, and G. CampsValls. "Pre-launch assessment of Worldview-3 information content". In: Lausanne, Switzerland, June 2014, pp. 24–27. URL: http://www.magellium.com/blog/whisper-2014-6th-workshop-on-hyperspectral-image-and-signal-processing-evolution-in-remote-sensing-2/.

[308] C. Marcos, S. Segura, G. Camps-Valls, P. Utrillas, and A. Martínez-Lozano. "Prediction of black carbon concentration in an urban site via advanced regression". In: *Iberian Meeting on Aerosol Science and Technology, RICTA*. Tarragona, Catalunya, Spain, July 2014, pp. 7–9. URL: http://wwwa.fundacio.urv.cat/congressos/ricta.

[309] A. Romero, C. Gatta, and G. Camps-Valls. "Unsupervised Deep Feature Extraction of Hyperspectral Images". In: Lausanne, Switzerland, June 2014.

[310] G. Tramontana, M. Jung, K. Ichii, A. Bloom, G. Camps-Valls, C. Schwalm, M. Reichstein, and D. Papale. "FLUXCOM, towards an ensemble of improved global data-driven products: cross-validation at site level and global scale". In: *Global change research symposium - Human and Ecosystem Response to Global Change: Evidence and Application*. Vol. 2014. Ostuni, Brindisi - Italy, Sept. 2014, pp. 16–18.

[311] D. Tuia, M. Volpi, and G. Camps-Valls. "Unsupervised alignment of image manifolds with centrality measures". In: 1. 2014, pp. 912–917. DOI: http://dx.doi.org/10.1109/ICPR.2014.167. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-84919897481&partnerID=40&md5=0d2c8a6c90f60bc063d4e8f43cf1cee4.

[312] J. Verrelst, J. P. Rivera, J. Muñoz, L. Alonso, G. Camps-Valls, and J. Moreno. "Advanced retrieval methods for leaf chlorophyll content in support of global mapping of vegetation fluorescence". In: *GVM (Global Vegetation Monitoring and Modelling)*. Vol. 2. Avignon, France, Feb. 2014, pp. 3–7.

[313] J. Amorós-López, E. Izquierdo-Verdiguier, L. Gómez-Chova, J. Muñoz-Marí, and G. Camps-Valls. "A kernel regression approach to cloud and shadow detection in multitemporal images". In: 0. 2013. DOI: http://dx.doi.org/10.1109/Multi-Temp.2013.6866014. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-84906902875&partnerID=40&md5=6cc10f1d4621c92e144800f804a28374.

[314] L. Gómez-Chova, E. Izquierdo-Verdiguier, J. Amorós-López, J. Muñoz-Marí, and G. Camps-Valls. "Kernel change discriminant analysis for multitemporal cloud masking". In: 1. 2013, pp. 2974–2977. DOI: http://dx.doi.org/10.1109/IGARSS.2013.6723450. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-84894281930&partnerID=40&md5=357f4137d261a9a3527d45a6ca15c035.

[315] L. Gomez-Chova, J. Munoz-Mari, J. Amoros-Lopez, E. Izquierdo-Verdiguier, and G. Camps-Valls. "Advances in synergy of AATSR-MERIS sensors for cloud detection". In: 1. 2013, pp. 4391–4394. DOI: http://dx.doi.org/10.1109/IGARSS.2013.6723808. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-84894285290&partnerID=40&md5=1bb1192be5456fd618af98b5342ff4b9.

[316] J.-P. Jacobs, G. Thoonen, D. Tuia, G. Camps-Valls, B. Haest, and P. Scheunders. "Domain adaptation with Hidden Markov Random Fields". In: 1. 2013, pp. 3112–3115. DOI: http://dx.doi.org/10.1109/IGARSS.2013.6723485. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-84894278289&partnerID=40&md5=67ce66bd5aa3929c94dfb98dda33cc3f.

[317] M. Lazaro-Gredilla, M. Titsias, J. Verrelst, and G. Camps-Valls. "Estimation of vegetation chlorophyll content with Variational Heteroscedastic Gaussian Processes". In: 0. 2013, pp. 3010–3013. DOI: http://dx.doi.org/10.1109/IGARSS.2013.6723459. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-84894232867&partnerID=40&md5=40316d39d0ba9d2fa9defcb9d03c7561.

[318] J. Muñoz-Marí, L. Gómez-Chova, J. Amorós, E. Izquierdo, and G. Camps-Valls. "Multiset Kernel CCA for multitemporal image classification". In: 0. 2013. DOI: http://dx.doi.org/10.1109/Multi-Temp.2013.6866020. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-84906898026&partnerID=40&md5=dca254c0bb24ff337895cefe33f5aba1.

[319] V. Talens, V. Laparra, J. Malo, and G. Camps-Valls. "Kernel Structural SIMIlarity on hyperspectral images". In: 1. 2013, pp. 1214–1217. DOI: http://dx.doi.org/10.1109/IGARSS.2013.6722998. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-84894248181&partnerID=40&md5=dcd8cadb5ea79a794db78ff80fbc53d0.

[320] J. Verrelst, J. Rivera, G. Camps-Valls, and J. Moreno. "Recent advances in biophysical parameter retrieval methods – opportunities for Sentinel-2". In: *ESA Living Planet Symposium 2013, 09-13 September, Edinburgh, UK*. 2013.

[321] J. Verrelst, J. P. Rivera, J. Muñoz, L. Alonso, G. Camps-Valls, and J. Moreno. "ARTMO's new Machine Learning Regression Algorithm (MLRA) module for semiautomatic mapping of biophysical parameters". In: *EARSeL 8th SIG-Imaging Spectroscopy Workshop 2013, 08-10 April, Nantes, France*. 2013.

[322] M. Volpi, F. De Morsier, G. Camps-Valls, M. Kanevski, and D. Tuia. "Multi-sensor change detection based on nonlinear canonical correlations". In: 1. 2013, pp. 1944–1947. DOI: http://dx.doi.org/10.1109/IGARSS.2013.6723187. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-84894231213&partnerID=40&md5=bce6a6f614635ecb961384f037da7eb2.

[323] L. Gomez-Chova, J. Amoros-Lopez, E. Izquierdo-Verdiguier, J. Jimenez-Munoz, and G. Camps-Valls. "Cloud screening from multispectral image time series". In: *EARSel Society*. Mykonos, Greece, May 2012, 2012. DOI: http://dx.doi.org/.

[324] L. Gomez-Chova and G. Camps-Valls. "Learning with the kernel signal to noise ratio". In: 0. 2012. DOI: http://dx.doi.org/10.1109/MLSP.2012.6349715. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-84870658481&partnerID=40&md5=702f25c382d3d87f1d5c9b3509995474.

[325] E. Izquierdo-Verdiguier, J. Arenas-García, S. Muñoz-Romero, L. Gómez-Chova, and G. Camps-Valls. "Semisupervised kernel orthonormalized partial least squares". In: 0. 2012. DOI: http://dx.doi.org/10.1109/MLSP.2012.6349718. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-84870695876&partnerID=40&md5=15f78e6b5cf86a59a0321b64c23fde02.

[326] E. Izquierdo-Verdiguier, L. Gómez-Chova, L. Bruzzone, and G. Camps-Valls. "Semisupervised nonlinear feature extraction for image classification". In: 2. 2012, pp. 1525–1528. DOI: http://dx.doi.org/10.1109/IGARSS.2012.6351244. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-84873146640&partnerID=40&md5=c54f7b31b50105ac645265f49db4233e.

[327] E. Izquierdo-Verdiguier, V. Laparra, L. Gomez-Chova, and G. Camps-Valls. "Including invariances in SVM remote sensing image classification". In: 0. 2012, pp. 7353–7356. DOI: http://dx.doi.org/10.1109/IGARSS.2012.6351931. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-84873204379&partnerID=40&md5=44ba53ad33720f01d9276610c0169c35.

[328] V. Laparra, D. Tuia, S. Jimenez, G. Camps-Valls, and J. Malo. "Nonlinear data description with Principal Polynomial Analysis". In: 0. 2012. DOI: http://dx.doi.org/10.1109/MLSP.2012.6349786. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-84870708190&partnerID=40&md5=550361e2455a3174df7f4de5547c2955.

[329] J. Amoros-Lopez, L. Gómez-Chova, L. Guanter, L. Alonso, J. Moreno, and G. Camps-Valls. "Multitemporal fusion of Landsat and MERIS images". In: *Analysis of Multi-temporal Remote Sensing Images (Multi-Temp), 2011 6th International Workshop on the*. July 2011, pp. 81–84. DOI: http://dx.doi.org/10.1109/Multi-Temp.2011.6005053.

[330] J. Amoros-Lopez, L. Gómez-Chova, L. Guanter, L. Alonso, J. Moreno, and G. Camps-Valls. "Multitemporal fusion of Landsat and MERIS images". In: *Analysis of Multi-temporal Remote Sensing Images (Multi-Temp), 2011 6th International Workshop on the*. July 2011, pp. 81–84. DOI: http://dx.doi.org/10.1109/Multi-Temp.2011.6005053.

[331] G. Camps-Valls. "Support vector machines in remote sensing: The tricks of the trade". In: vol. 8180. 0. 2011. DOI: http://dx.doi.org/10.1117/12.903949. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-81755167010&partnerID=40&md5=104e2ae4e4dedba3f5ccbf49e35b55c2.

[332] G. Camps-Valls, V. Laparra, J. Muñoz-Marí, L. Gómez-Chova, and X. Calbet. "Kernel-based retrieval of atmospheric profiles from IASI data". In: 2. 2011, pp. 2813–2816. DOI: http://dx.doi.org/10.1109/IGARSS.2011.6049799. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-80955159843&partnerID=40&md5=4dfc79fc8b30388ca0d9ce9a1425cfb6.

[333] L. Gómez-Chova, A. Nielsen, and G. Camps-Valls. "Explicit signal to noise ratio in reproducing kernel Hilbert spaces". In: 3. 2011, pp. 3570–3573. DOI: http://dx.doi.org/10.1109/IGARSS.2011.6049993. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-80955159602&partnerID=40&md5=d3300dbb188f6740765b5cbf466590f1.

[334] L. Gómez-Chova, R. Jenssen, and G. Camps-Valls. "Kernel entropy component analysis in remote sensing data clustering". In: *Geoscience and Remote Sensing Symposium (IGARSS), 2011 IEEE International*. July 2011, pp. 3728–3731. DOI: http://dx.doi.org/10.1109/IGARSS.2011.6050035.

[335] L. Gómez-Chova, R. Jenssen, and G. Camps-Valls. "Kernel entropy component analysis in remote sensing data clustering". In: *Geoscience and Remote Sensing Symposium (IGARSS), 2011 IEEE International*. July 2011, pp. 3728–3731. DOI: http://dx.doi.org/10.1109/IGARSS.2011.6050035.

[336] V. Laparra, D. Tuia, S. Jiménez, G. Camps-Valls, and J. Malo. "Principal polynomial analysis for remote sensing data processing". In: 2. 2011, pp. 4180–4183. DOI: http://dx.doi.org/10.1109/IGARSS.2011.6050151. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-80955167647&partnerID=40&md5=e82e8114b4e6750b6ca82abba0e96ea4.

[337] V. Talens, J. Moreno, and G. Camps-Valls. "Kernel image similarity criterion". In: 1. 2011, pp. 527–530. DOI: http://dx.doi.org/10.1109/IGARSS.2011.6049181. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-80955148118&partnerID=40&md5=7927db3178194c936f3406aca042e5fc.

[338] D. Tuia, G. Camps-Valls, and M. Martinez-Ramon. "Explicit recursivity into reproducing kernel Hilbert spaces". In: 1. 2011, pp. 4148–4151. DOI: http://dx.doi.org/10.1109/ICASSP.2011.5947266. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-80051654279&partnerID=40&md5=cf5a0d7fce1afb80c76b713ae4ebcc2c.

[339] D. Tuia, J. Muñoz-Marí, and G. Camps-Valls. "Large scale semi-supervised image segmentation with active queries". In: 1. 2011, pp. 2653–2656. DOI: http://dx.doi.org/10.1109/IGARSS.2011.6049748. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-80955136713&partnerID=40&md5=1e3fa0ae180753574177fa56357cf1ac.

[340] M. Volpi, D. Tuia, G. Camps-Valls, and M. Kanevski. "Unsupervised change detection in the feature space using kernels". In: 1. 2011, pp. 106–109. DOI: http://dx.doi.org/10.1109/IGARSS.2011.6048909. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-80955145168&partnerID=40&md5=059392d488dc1bd8df142fd221c2557d.

[341] J. Amoros Lopez, L. Gómez Chova, L. Guanter, L. Alonso, G. Camps-Valls, and J. Moreno. "ENVISAT/MERIS and Landsat/TM Image Fusion using a Multi-Resolution Linear Unmixing". In: *European Space Agency Living Planet Symposium*. Bergen, Norway: ESA SP-686, ESA Publications Division, June 2010.

[342] J. Amoros, L. Gómez-Chova, L. Guanter, L. Alonso, J. Moreno, and G. Camps-Valls. "Multi-resolution Spatial Unmixing for MERIS and Landsat Image Fusion". In: *IEEE International Geoscience and Remote Sensing Symposium, IGARSS'2010*. Hawaii, USA, July 2010, pp. 3672–3675.

[343] M. Armengot, V. Laparra, L. Gómez-Chova, J. Malo, and G. Camps-Valls. "Adaptive kernel ridge regression for image denoising". In: 0. 2010, pp. 432–437. DOI: http://dx.doi.org/10.1109/MLSP.2010.5588824. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-78449312090&partnerID=40&md5=c9421ab0d83dc1c977e1c20f69c2aff2.

[344] G. Camps-Valls, L. Guanter, J. Muñoz-Marí, L. Gómez-Chova, and X. Calbet. "Nonlinear retrieval of atmospheric profiles from MetOp-IASI and MTG-IRS data". In: vol. 7830. 0. 2010. DOI: http://dx.doi.org/10.1117/12.864928. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-78649735151&partnerID=40&md5=21792e80bb0499446033577799c854bb.

[345] G. Camps-Valls, D. Tuia, V. Laparra, and J. Malo. "Estimating biophysical variable dependences with kernels". In: 0. 2010, pp. 828–831. DOI: http://dx.doi.org/10.1109/IGARSS.2010.5651508. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-78650913820&partnerID=40&md5=8f80f8d05a05fa88e6e51844078748cc.

[346] A. Erkan, G. Camps-Valls, and Y. Altun. "Semi-supervised remote sensing image classification via maximum entropy". In: 1. 2010, pp. 313–318. DOI: http://dx.doi.org/10.1109/MLSP.2010.5589199. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-78449280685&partnerID=40&md5=610c9ad964ca2bd6f6e0cc6622baffb1.

[347] L. Gómez-Chova, J. Muñoz-Marí, E. Izquierdo-Verdiguier, G. Camps-Valls, J. Calpe-Maravilla, J. Moreno, R. Preusker, J. Fischer, C. Brockmann, P. North, and P. Regner. "Synergistic use of MERIS and AATSR Data for Cloud Screening". In: *European Space Agency Living Planet Symposium*. Bergen, Norway: ESA SP-686, ESA Publications Division, June 2010.

[348] L. Gómez-Chova, R. Zurita-Milla, L. Alonso, L. Guanter, J. Amoros-Lopez, G. Camps-Valls, and J. Moreno. "Gridding Artifacts on ENVISAT/MERIS Temporal Series". In: *European Space Agency Living Planet Symposium*. Bergen, Norway: ESA SP-686, ESA Publications Division, June 2010.

[349] J. Leiva-Murillo, L. Gómez-Chova, and G. Camps-Valls. "Multitask SVM learning for remote sensing data classification". In: vol. 7830. 0. 2010. DOI: http://dx.doi.org/10.1117/12.865045. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-78649752966&partnerID=40&md5=b5f28597a973aafae2331afed8f63255.

[350] J. Moreno, L. Guanter, L. Alonso, L. Gómez-Chova, J. Amorós, G. Camps-Valls, and J. Delegido. "Land science with Sentinel-2 and Sentinel-3 data series synergy". In: *European Geosciences Union, EGU General Assembly 2010*. Vienna, Austria, May 2010.

[351] D. Tuia, G. Camps-Valls, R. Flamary, and A. Rakotomamonjy. "Learning spatial filters for multispectral image segmentation". In: 0. 2010, pp. 41–46. DOI: http://dx.doi.org/10.1109/MLSP.2010.5589202. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-78449295478&partnerID=40&md5=577714f2ef00091f79a59897ee1d87d4.

[352] D. Tuia, M. Kanevski, J. Marí, and G. Camps-Valls. "Cluster-based active learning for compact image classification". In: 2. 2010, pp. 2824–2827. DOI: http://dx.doi.org/10.1109/IGARSS.2010.5650238. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-78650886233&partnerID=40&md5=2efded83fbfa6a901a55e03a579ad8f0.

[353] J. Verrelst, L. Alonso, G. Camps-Valls, and J. Moreno. "Empirical and statistical approaches for the improved retrieval of chlorophyll and LAI from Sentinel-2 data". In: *ESA Living Planet Symposium 2010*. Bergen, Norway, 2010.

[354] G. Villa, J. Moreno, A. Calera, J. Amorós-López, Camps-Valls, G. Domenech, P., J. Garrido, J. González-Matesanz, L. Gómez-Chova, S. Luances, J. Martínez-Pérez, S. Molina, J. C. Ojeda, J. Peces, N. Plaza, J. Porcuna, J. Tejeiro, and N. Valcarcel. "STRS (Spectro-Temporal Reflectance Surfaces): a new conceptual framework for the integration of remote sensing data from multiple different sensors". In: *3rd International Symposium on Recent Advances in Quantitative Remote Sensing, RAQRS'III*. València, Spain, Sept. 2010.

[355] M. Volpi, D. Tuia, G. Camps-Valls, and M. Kanevski. "Unsupervised change detection by kernel clustering". In: vol. 7830. 3. 2010. DOI: http://dx.doi.org/10.1117/12.864921. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-78649733650&partnerID=40&md5=8fa2ef1174ca950d3610129aaa9e56b8.

[356] G. Camps-Valls. "Machine learning in remote sensing dataprocessing". In: 0. 2009. DOI: http://dx.doi.org/10.1109/MLSP.2009.5306233. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-77950950011&partnerID=40&md5=5cb49e1e6d7974b42b958aac547bf0fe.

[357] G. Camps-Valls, L. Gómez-Chova, J. Muñoz-Marí, J. Vila-Francés, J. Amorós, S. Del Valle-Tascon, and J. Calpe-Maravilla. "Biophysical parameter estimation with adaptive Gaussian processes". In: vol. 4. 2. 2009, pp. IV69–IV72. DOI: http://dx.doi.org/10.1109/IGARSS.2009.5417372. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-77951292034&partnerID=40&md5=ad33e63bd1d1380ae90d0ed205251e18.

[358] L. Capobianco, A. Garzelli, and G. Camps-Valls. "Semi-supervised kernel target detection in hyperspectral images". In: 0. 2009, pp. 566–571. DOI: http://dx.doi.org/10.1109/ISDA.2009.121. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-77949513698&partnerID=40&md5=93b98a7ccf4669a60a10feb9e8fb0a97.

[359] L. Gómez-Chova, G. Camps-Valls, J. Muñoz-Marí, J. Calpe, and J. Moreno. "Improved cloud detection by means of the synergistic use of MERIS and AATSR data". In: *GlobCloud Workshop "Clouds: from satellite observations to atmospheric modelling"*. Berlin, Germany, Mar. 2009.

[360] L. Gómez-Chova, J. Muñoz-Marí, E. Izquierdo-Verdiguier, G. Camps-Valls, J. Calpe, and J. Moreno. "Cloud screening with combined MERIS and AATSR images". In: vol. 4. 4. 2009, pp. IV761–IV764. DOI: http://dx.doi.org/10.1109/IGARSS.2009.5417488. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-77951273267&partnerID=40&md5=7c707e233251b5e1a7be21059ca5dcaa.

[361] V. Laparra, G. Camps-Valls, and J. Malo. "PCA Gaussianization for image processing". In: 1. 2009, pp. 3985–3988. DOI: http://dx.doi.org/10.1109/ICIP.2009.5413808. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-77951972845&partnerID=40&md5=de5addc4ae97ba0421c91d1be4df3629.

[362] V. Laparra, J. Muñoz-Marí, G. Camps-Valls, and J. Malo. "PCA Gaussianization for one-class remote sensing image classification". In: vol. 7477. 1. 2009. DOI: http://dx.doi.org/10.1117/12.834011. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-70350454801&partnerID=40&md5=93643dd2d4585e922dc23927a6633c92.

[363] D. Tuia and G. Camps-Valls. "Cluster kernels for semisupervised classification of VHR urban images". In: 0. 2009. DOI: http://dx.doi.org/10.1109/URS.2009.5137576. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-70350153627&partnerID=40&md5=96fff85d20a26c80707783fdb431c36e.

[364] D. Tuia and G. Camps-Valls. "Recent advances in remote sensing image processing". In: 6. 2009, pp. 3705–3708. DOI: http://dx.doi.org/10.1109/ICIP.2009.5414281. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-77951973998&partnerID=40&md5=d68b2f555e4340abfc9faac54d4fd695.

[365] D. Tuia, M. Kanevski, J. Muñoz-Marí, and G. Camps-Valls. "Structured output SVM for remote sensing image classification". In: 0. 2009. DOI: http://dx.doi.org/10.1109/MLSP.2009.5306235. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-77950948397&partnerID=40&md5=d82e74e9d40b8450ae91a6d95bd2504f.

[366] D. Tuia, M. Kanevski, J. Muñoz-Marí, and G. Camps-Valls. "Structured SVM for Remote Sensing Image Classification". In: *IEEE Workshop on Machine Learning for Signal Processing (MLSP09)*. Grenoble, France, 2009.

[367] D. Tuia, G. Matasci, G. Camps-Valls, and M. Kanevski. "Learning the relevant image features with multiple kernels". In: vol. 2. 1. 2009, pp. II65–II68. DOI: http://dx.doi.org/10.1109/IGARSS.2009.5418002. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-77951095824&partnerID=40&md5=e6d86e4a3e2bddcb4563340d3e80831c.

[368] J. Amorós-López, E. Izquierdo Verdiguier, L. Gómez-Chova, J. Muñoz-Marí, J. Zoilo Rodríguez-Barreiro, G. Camps-Valls, and J. Calpe-Maravilla. "Multi-stage robust scheme for citrus identification from high resolution airborne images". In: vol. 7109. 1. 2008. DOI: http://dx.doi.org/10.1117/12.801737. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-57649121039&partnerID=40&md5=2a72fad1f64e1504e936090b09f4c5f5.

[369] J. Arenas-García and G. Camps-Valls. "Efficient kernel orthonormalized PLS for remote sensing applications". In: vol. 46. 10. 33. 2008, pp. 2872–2881. DOI: http://dx.doi.org/10.1109/TGRS.2008.918765. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-53949085760&partnerID=40&md5=e8094d93d3751aafd63791e5246366ef.

[370] F. Bovolo and G. Camps-Valls. "Unsupervised Change Detection with Support Vector Domain Description". In: *Image Information Mining: pursuing automation of geospatial intelligence for environment and security, IIM ESA-EUSC 2008*. ESRIN, Frascati, Italy: ESA Publications Division, Mar. 2008.

[371] G. Camps-Valls, J. Muñoz-Marí, L. Gómez-Chova, and J. Calpe-Maravilla. "Semi-supervised support vector biophysical parameter estimation". In: vol. 3. 1. 0. 2008, pp. III1131–III1134. DOI: http://dx.doi.org/10.1109/IGARSS.2008.4779554. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-67649766436&partnerID=40&md5=406a3ceb667be74423f706bb70625b16.

[372] L. Capobianco and G. Camps-Valls. "Target detection with a contextual kernel orthogonal subspace projection". In: vol. 7109. 1. 2008. DOI: http://dx.doi.org/10.1117/12.801735. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-57649123393&partnerID=40&md5=ebce560a58f3baacbf72b04ef8215161.

[373] L. Capobianco, A. Garzelli, and G. Camps-Valls. "Semi-supervised kernel orthogonal subspace projection". In: vol. 4. 1. 1. 2008, pp. IV216–IV219. DOI: http://dx.doi.org/10.1109/IGARSS.2008.4779696. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-67649793241&partnerID=40&md5=5a759c6e6940d8077558b75f6993459f.

[374] L. Gómez-Chova, L. Bruzzone, G. Camps-Valls, and J. Calpe-Maravilla. "Semi-supervised remote sensing image classification based on clustering and the mean map kernel". In: vol. 4. 1. 2. 2008, pp. IV391–IV394. DOI: http://dx.doi.org/10.1109/IGARSS.2008.4779740. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-67649789073&partnerID=40&md5=2688b1a142fced75b12cebb12a807711.

[375] L. Gómez-Chova, G. Camps-Valls, J. Muñoz-Marí, J. Calpe, and J. Moreno. "Cloud screening methodology for MERIS/AATSR synergy products". In: 666 SP. 0. 2008. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-77954564921&partnerID=40&md5=01c64dd5a2e0041e3807003a1aec2465.

[376] J. Gómez-Sanchis, G. Camps-Valls, E. Moltó, L. Gómez-Chova, N. Aleixos, and J. Blasco. "Segmentation of hyperspectral images for the detection of rotten mandarins". In: vol. 5112 LNCS. 2. 2008, pp. 1071–1080. DOI: http://dx.doi.org/10.1007/978-3-540-69812-8_107. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-47749088297&partnerID=40&md5=21e41e7c7b18401ab372c29087a08aa2.

[377] J. Gómez-Sanchis, E. Moltó, N. Aleixos, G. Camps-Valls, L. Gómez-Chova, and J. Blasco. "Correction of the effects of the light source on quasi-spherical objects: Application to modelling spherical fruits". In: 0. 2008. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-84858414904&partnerID=40&md5=1039a585229f4aba8a25ff5a2980d87f.

[378] V. Laparra, J. Gutiérrez, G. Camps-Valls, and J. Malo. "Recovering wavelet relations using SVM for image denoising". In: 2. 2008, pp. 541–544. DOI: http://dx.doi.org/10.1109/ICIP.2008.4711811. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-69949156959&partnerID=40&md5=04e46594ed81a61e458525e977503ad0.

[379] J. Muñoz-Marí, L. Gómez-Chova, G. Camps-Valls, and J. Calpe-Maravilla. "Image classification with semi-supervised one-class support vector machine". In: vol. 7109. 0. 2008. DOI: http://dx.doi.org/10.1117/12.801738. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-57649136626&partnerID=40&md5=aba9a2ad4198d974370f1f752d610720.

[380] J. Arenas-García and G. Camps-Valls. "Feature extraction from remote sensing data using kernel orthonormalized PLS". In: 4. 2007, pp. 258–261. DOI: http://dx.doi.org/10.1109/IGARSS.2007.4422779. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-50849102941&partnerID=40&md5=3fe7dccd29cfe03816dcf7483eb35699.

[381] T. Bandos, L. Bruzzone, and G. Camps-Valls. "Efficient regularized LDA for hyperspectral image classification". In: vol. 6748. 2. 2007. DOI: http://dx.doi.org/10.1117/12.737157. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-42449161917&partnerID=40&md5=5728055943f25711cfa0589d067e1c47.

[382] F. Bovolo, G. Camps-Valls, and L. Bruzzone. "An unsupervised support vector method for change detection". In: vol. 6748. 0. 2007. DOI: http://dx.doi.org/10.1117/12.737764. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-42449130099&partnerID=40&md5=3bb1b54cdcfc68bcf84c3fdc67dae77f.

[383] G. Camps-Valls, A. Rodrigo-González, J. Muñoz-Marí, L. Gómez-Chova, and J. Calpe-Maravilla. "Hyperspectral image classification with Mahalanobis relevance vector machines". In: 10. 2007, pp. 3802–3805. DOI: http://dx.doi.org/10.1109/IGARSS.2007.4423671. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-78650887658&partnerID=40&md5=e95bbc3dda494386013234f5cd8b9408.

[384] L. Gómez-Chova, G. Camps-Valls, J. Muñoz-Marí, and J. Calpe. "Semi-supervised cloud screening with Laplacian SVM". In: 2. 2007, pp. 1521–1524. DOI: http://dx.doi.org/10.1109/IGARSS.2007.4423098. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-67649685704&partnerID=40&md5=0b67e589cd538bf478d06232c47d5fba.

[385] L. Gómez-Chova, R. Zurita-Milla, G. Camps-Valls, L. Guanter, J. Clevers, J. Calpe, M. Schaepman, and J. Moreno. "Cloud screening and multitemporal unmixing of MERIS FR data". In: SP-636. 0. 2007. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-36448961290&partnerID=40&md5=969a454a912a9f28b84a1f0912c5cd39.

[386] J. Muñoz-Marí, G. Camps-Valls, L. Gómez-Chova, and J. Calpe-Maravilla. "Combination of one-class remote sensing image classifiers". In: 6. 2007, pp. 1509–1512. DOI: http://dx.doi.org/10.1109/IGARSS.2007.4423095. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-82355184425&partnerID=40&md5=90410424360a0e2d1c15debf0ee41909.

[387] R. Zurita-Milla, L. Gómez-Chova, J. Clevers, M. Schaepman, and G. Camps-Valls. "Multitemporal Unmixing of MERIS FR Data". In: *10th International Symposium on Physical Measurements and Signatures in Remote Sensing (ISPMSRS07)*. Davos (Switzerland): ESA Publications Division, Mar. 2007.

[388] F. Alonso-Atienza, J. L. Rojo-álvarez, G. Camps-Valls, A. Rosado-Muñoz, and A. Garcıa-Alberola. "Bootstrap feature selection in support vector machines for ventricular fibrillation detection". In: *Proc. European Society of Artificial Neural Networks, ESANN'2206*. Bruges, Belgium, Apr. 2006, pp. 233–238.

[389] T. Bandos, D. Zhou, and G. Camps-Valls. "Semi-supervised hyperspectral image classification with graphs". In: 7. 2006, pp. 3883–3886. DOI: http://dx.doi.org/10.1109/IGARSS.2006.996. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-34948821241&partnerID=40&md5=56c30d0419b3fad00c7a569ce7fe00a4.

[390] G. Camps-Valls, L. Gomez-Chova, J. Muñoz-Marí, L. Alonso, J. Calpe-Maravilla, and J. Moreno. "Multitemporal image classification and change detection with kernels". In: vol. 6365. 10. 2006. DOI: http://dx.doi.org/10.1117/12.689585. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-33751408786&partnerID=40&md5=ecbbc6bfcdebb40ebb4a61ef495787cb.

[391] L. Gómez-Chova, L. Alonso, L. Guanter, G. Camps-Valls, J. Calpe, and J. Moreno. "Modelling spatial and spectral systematic noise patterns on CHRIS/PROBA hyperspectral data". In: vol. 6365. 3. 2006. DOI: http://dx.doi.org/10.1117/12.690033. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-33751429246&partnerID=40&md5=f5c46afdbf9dfd057e7693b8aa609633.

[392] L. Gómez-Chova, G. Camps-Valls, J. Amorós-López, J. Calpe, L. Guanter, L. Alonso, J. C. Fortea, and J. Moreno. "Cloud probability mask for PROBA/CHRIS hyperspectral images". In: *Proceedings of the IV CHRIS/Proba Workshop*. ESRIN, Frascati, Italy: ESA Publications Division, Sept. 2006, ESA SP–4.

[393] L. Gómez-Chova, G. Camps-Valls, J. Amorós-López, L. Guanter, L. Alonso, J. Calpe, and J. Moreno. "New cloud detection algorithm for multispectral and hyperspectral images: Application to ENVISAT/MERIS and PROBA/CHRIS sensors". In: 6. 2006, pp. 2757–2760. DOI: http://dx.doi.org/10.1109/IGARSS.2006.709. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-34948893555&partnerID=40&md5=8786b1ff807a862f4a4f561c30d04691.

[394] L. Gómez-Chova, R. Zurita-Milla, G. Camps-Valls, L. Guanter, J. Clevers, J. Calpe, M. E. Schaepman, and J. Moreno. "Multitemporal validation of an unmixing-based MERIS cloud screening algorithm". In: *2nd International Symposium. Recent Advantages in Quantitative Remote Sensing*. Torrent, Spain, Sept. 2006.

[395] J. Gómez-Sanchis, E. Moltó, L. Gómez-Chova, N. Aleixos, G. Camps-Valls, F. Juste, and J. Blasco. "Hyperspectral computer vision system for early detection of Penicillium digitatum in citrus fruits". In: *Proceedings of the XVI CIGR/EurAgEng/VDI-MEG/FAO World Congress 2006 - Agricultural Engineering for a better World*. Bonn, Germany, Sept. 2006, ISBN: 3–18–091958–2.

[396] A. Plaza, J. Benediktsson, J. Boardman, J. Brazile, L. Bruzzone, G. Camps-Valls, J. Chanussot, M. Fauvel, P. Gamba, A. Gualtieri, J. Tilton, and G. Trianni. "Advanced processing of hyperspectral images". In: 12. 2006, pp. 1974–1978. DOI: http://dx.doi.org/10.1109/IGARSS.2006.511. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-34948822201&partnerID=40&md5=9f0b9083d85c4b0743fac7e117a1f0e4.

[397] G. Camps-Valls, L. Gomez-Chova, J. Vila-Francés, J. Amorós-López, J. Muñoz-Marí, and J. Calpe-Maravilla. "Relevance vector machines for sparse learning of biophysical parameters". In: vol. 5982. 1. 2005. DOI: http://dx.doi.org/10.1117/12.627656. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-33644503553&partnerID=40&md5=85cf0e408d64ff01b28b5b6ff737a067.

[398] L. Gómez-Chova, J. Amorós, G. Camps-Valls, J. Martín, J. Calpe, L. Alonso, L. Guanter, J. Fortea, and J. Moreno. "Cloud detection for CHRIS/Proba hyperspectral images". In: vol. 5979. 3. 2005. DOI: http://dx.doi.org/10.1117/12.627704. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-33244494672&partnerID=40&md5=5fe6a7dd5525bcc9490e0f498308f511.

[399] L. Gómez-Chova, J. Calpe, G. Camps-Valls, J. Amorós, J. Martin, L. Alonso, L. Guanter, J. Fortea, and J. Moreno. "Cloud masking scheme based on spectral, morphological and physical features". In: 593. 0. 2005, pp. 65–74. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-23844473100&partnerID=40&md5=2964cc092d2284c32b8771955d4afec1.

[400] L. Gómez-Chova, G. Camps-Valls, J. Amorós, J. Martín, J. Calpe, L. Alonso, L. Guanter, J. Fortea, and J. Moreno. "Cloud detection for MERIS multispectral images". In: 597. 0. 2005, pp. 77–85. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-33645665921&partnerID=40&md5=3033a2496f8e093745593d6b69ef7537.

[401] L. Gómez-Chova, D. Fernández-Prieto, J. Calpe, and G. Camps-Valls. "Urban monitoring at a regional scale based on MERIS and ASAR data". In: 597. 0. 2005, pp. 201–208. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-33645673892&partnerID=40&md5=4ef334acaee27387039a02e5d094738b.

[402] J. D. Martín, P. G. J. Lisboa, E. Soria, A. Palomares, E. Balaguer, A. J. Serrano, and G. Camps-Valls. "Improving InfoVille XXI using Machine Learning Techniques". In: *10th International Conference on User Modelling 2005. Workshop on Machine Learning for User Modeling: Challenges*. Edinburg, UK, July 2005.

[403] G. Camps-Valls and L. Bruzzone. "Regularized methods for hyperspectral image classification". In: vol. 5573. 1. 2004, pp. 226–237. DOI: http://dx.doi.org/10.1117/12.601712. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-17644391751&partnerID=40&md5=3deec319893b0af17215450f074c8fd2.

[404] G. Camps-Valls, L. Gómez-Chova, J. Calpe-Maravilla, E. Soria-Olivas, J. Martín-Guerrero, and J. Moreno. "Kernel methods for HyMap imagery knowledge discovery". In: vol. 5238. 0. 2004, pp. 234–243. DOI: http://dx.doi.org/10.1117/12.510719. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-1942503318&partnerID=40&md5=741bdfb613fab679e48f1dc804a579a1.

[405] G. Camps-Valls, A. Serrano-López, L. Gómez-Chova, J. D. Martın, J. Calpe, and J. Moreno. "Regularized RBF Networks for Hyperspectral Data Classification". In: *International Conference on Image Recognition, ICIAR'04*. Vol. 3212. Porto, Portugal: Lecture Notes in Computer Science (LNCS). Springer-Verlag, Oct. 2004, pp. 429–436.

[406] L. Gómez-Chova, D. Fernández-Prieto, J. Calpe, E. Soria, J. Vila, and G. Camps-Valls. "Multispectral and Multitemporal SAR Data Characterization for Urban Monitoring". In: *3rd International Workshop on Pattern Recognition in Remote Sensing (PRRS'04)*. Kingston University, London, UK, Aug. 2004.

[407] L. Gómez-Chova, D. Fernández-Prieto, J. Calpe, E. Soria, J. Vila, and G. Camps-Valls. "Partially supervised hierarchical clustering of SAR and multispectral imagery for Urban areas monitoring". In: vol. 5573. 3. 2004, pp. 138–149. DOI: http://dx.doi.org/10.1117/12.565276. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-17644401738&partnerID=40&md5=4a399d42e63cf9c48be0d938ebdd87eb.

[408] L. Gomez-Chova, J. Calpe, G. Camps-Valls, J. Martin, E. Soria, J. Vila, L. Alonso-Chorda, and J. Moreno. "Robust automatic classification method for hyperspectral imagery". In: vol. 5238. 2. 2004, pp. 398–407. DOI: http://dx.doi.org/10.1117/12.510673. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-1942471006&partnerID=40&md5=529c9c394576a5690aada2f8e619b8eb.

[409] J. D. Martín-Guerrero, E. Balaguer-Ballester, G. Camps-Valls, A. Palomares, A. J. Serran-López, J. Gómez-Sanchis, and E. Soria-Olivas. "Machine Learning Methods for One-Session Ahead Prediction of Accesses to Page Categories." In: *3rd International Conference on Adaptive Hypermedia and Adaptive Web-based Systems, AH'04*. Vol. 3137. Eindhoven, The Netherlands: Lecture Notes in Computer Science (LNCS). Springer-Verlag, Aug. 2004, pp. 421–424.

[410] J. Calpe, L. Gómez-Chova, G. Camps-Valls, J. D. Martín, E. Soria, J. Vila, L. Alonso-Chorda, and J. Moreno. "Machine learning methods for hyperspectral image analysis and modeling". In: *Workshop: SPECTRA: a space-borne Earth Observation Mission to address the role of terrestrial vegetation in the Carbon Cycle*. ESTEC. Noordwijk, The Netherlands. (ESA WPP-225, March 2004). (ISSN: 1022-6656), Oct. 2003.

[411] G. Camps-Valls, L. Gómez-Chova, J. Calpe-Maravilla, E. Soria-Olivas, J. D. Martín-Guerrero, and J. Moreno. "Support Vector Machines for Crop Classification Using Hyperspectral Data". In: *Iberian Conference on Pattern Recognition and Image Analysis. IbPRIA'03*. Vol. 2085. Mallorca, Spain: Lecture Notes in Computer Science (LNCS). Springer-Verlag, Aug. 2003, pp. 134–141.

[412] G. Camps-Valls, A. J. Serrano-López, B. Porta-Oltra, J. D. Martın-Guerrero, E. Soria-Olivas, and N. V. Jiménez-Torres. "Neural networks for $C_2hcyclosporineconcentrationmodelling$". In: *32nd European Symposium on Clinical Pharmacy, ESCP'03*. 1. València, Spain, Sept. 2003, P28.

[413] L. Gómez-Chova, J. Calpe, E. Soria, G. Camps-Valls, J. Martín, and J. Moreno. "CART-based feature selection of hyperspectral images for crop cover classification". In: vol. 3. 7. 2003, pp. 589–592. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-0345134153&partnerID=40&md5=280799f49bd0d4038c3938e82f0363f0.

[414] L. Gómez, J. Calpe, G. Camps-Valls, J. D. Martín, E. Soria, and J. Moreno. "Robust Automatic Classification Method for Hyperspectral Imagery". In: *SPIE Remote Sensing Symposium. Image and Signal Processing for Remote Sensing IX. SPIE03*. Vol. 5238. Barcelona, Spain, Sept. 2003, pp. 398–407.

[415] L. Gomez-Chova, J. Calpe, G. Camps-Valls, J. Martín, E. Soria, J. Vila, L. Alonso-Chorda, and J. Moreno. "Feature Selection of Hyperspectral Data Through Local Correlation and SFFS for Crop Classification". In: vol. 1. 22. 2003, pp. 555–557. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-0242459609&partnerID=40&md5=baf5a872c15835ca0229b51109aaabcc.

[416] L. Gomez-Chova, J. Calpe, G. Camps-Valls, J. Martín, E. Soria, J. Vila, L. Alonso-Chorda, and J. Moreno. "Semi-Supervised Classification Method for Hyperspectral Remote Sensing Images". In: vol. 3. 4. 2003, pp. 1776–1778. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-0242541981&partnerID=40&md5=4d4eca2d95473e163cd2d077d63697ca.

[417] J. D. Martín, L. Gómez, J. Calpe, G. Camps-Valls, E. Soria, and J. Moreno. "A soft approach to ERA algorithm for hyperspectral image classification". In: *IEEE International International. Symposium on Image and Signal Processing and Analysis (ISPA 2003)*. Vol. 2. Rome, Italy, Sept. 2003, pp. 761–765.

[418] L. Gómez, J. Calpe, E. Soria, G. Camps-Valls, J. D. Martín, and J. Moreno. "Semi-supervised method for crop classification using hyperspectral remote sensing images". In: *1st International Symposium. Recent Advantages in Quantitative Remote Sensing, RAQRS'2002*. Torrent (València), Sept. 2002, pp. 488–495.

[419] J. D. Martín, E. Soria, G. Camps-Valls, A. J. Serrano, J. R. Sepúlveda, and N. V. Jiménez. "Solving clinical problems with artificial neural networks: some case studies". In: *Second European Symposium on Intelligent Technologies, Hybrid Systems and their implementation on Smart Adaptive Systems EUNITE 2002*. CD y Booklet. Published at "Intelligent e-Health Applications in Medicine" (Univ. of Aegean). Albufeira (Portugal), Sept. 2002.

[420] F. Pérez-Cruz, G. Camps-Valls, E. Soria-Olivas, J. J. Pérez-Ruixo, A. R. Figueiras-Vidal, and A. Artés-Rodríguez. "Multi-dimensional Function Approximation and Regression Estimation". In: *International Conference on Artificial Neural Networks, ICANN'02*. Vol. 2415. Madrid, Spain: Lecture Notes in Computer Science (LNCS). Springer-Verlag, Aug. 2002, pp. 757–782.

[421] A. Rosado-Muñoz, G. Camps-Valls, J. Guerrero-Martínez, J. Francés-Villora, J. Muñoz-Marí, and A. Serrano-López. "Enhancing feature extraction for VF detection using data mining techniques". In: vol. 29. 3. 2002, pp. 209–212. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-0036955664&partnerID=40&md5=e2f36b97a50d29d6b029fea3296785e2.

[422] A. Rosado, J. R. Magdalena, J. Muñoz, M. Bataller, and G. Camps. "Two different approaches for a real-time acquisition system for Ventricular Fibrillation detection using time-frequency algorithms". In: *International Conference TELEC02*. Libro de Actas+CD-ROM. Santiago de Cuba (Cuba), July 2002.

[423] J. Sepúlveda-Sanchis, G. Camps-Valls, E. Soria-Olivas, S. Salcedo-Sanz, C. Bousoño-Calzón, G. Sanz-Romero, and J. Marrugat de la Iglesia. "Support vector machines and genetic algorithms for detecting unstable angina". In: vol. 29. 1. 2002, pp. 413–416. URL: http://www.scopus.com/inward/record.url?eid=2-s2.0-0036945610&partnerID=40&md5=b163149c2f9feb4566ac2842bc154434.

[424] A. J. Serrano, E. Soria, G. Camps-Valls, J. D. Martín, J. R. Sepúlveda, R. Magdalena, and N. V. Jiménez. "Web-based Clinical Decision Support System Using Neural Networks". In: *Second European Symposium on Intelligent Technologies, Hybrid Systems and their implementation on Smart Adaptive Systems EUNITE 2002*. CD y Booklet. Published at "Intelligent e-Health Applications in Medicine" (Univ. of Aegean). Albufeira (Portugal), Sept. 2002.

[425] G. Camps-Valls, B. Porta, J. J. Pérez-Ruixo, E. Soria, J. D. Martín, and V. Jiménez. "Comparative study of NONMEM and Neural Networks for Cyclosporine Dosage Prediction in Renal Allograft Recipients". In: *Population Approach Group Europe (PAGE2001), ISSN 1871-6032*. Vol. Abstr 217. Basel, Suiza, June 2001. URL: http://www.page-meeting.org/.

[426] G. Camps-Valls, E. Soria-Olivas, J. D. Martın-Guerrero, J. J. Pérez-Ruixo, and N. V. Jiménez-Torres. "Neural Networks Ensemble for Cyclosporine Concentration Monitoring". In: *International Conference on Artificial Neural Networks, ICANN'2001*. Vol. 2130. Vienna, Austria: Lecture Notes in Computer Science (LNCS). Springer-Verlag, Aug. 2001, pp. 706–711.

[427] G. Camps-Valls, E. Soria-Olivas, J. Pérez-Ruixo, A. Artés-Rodrıguez, F. Pérez-Cruz, and A. Figueiras-Vidal. "A Profile-Dependent Kernel-based Regression for Cyclosporine Concentration Prediction". In: *Neural Information Processing Systems, NIPS'01. Workshop on New Directions in Kernel-based Learning Methods*. Vancouver, British Columbia, Canada, Dec. 2001.

[428] G Camps-Valls, E Soria-Olivas, J Pérez-Ruixo, A Artés-Rodríguez, F Pérez-Cruz, and A Figueiras-Vidal. "A profile-dependent kernel-based regression for cyclosporine concentration prediction". In: *Neural Information Processing Systems (NIPS)–Workshop on New Directions in Kernel-Based Learning Methods*. 2001. URL: https://www.semanticscholar.org/paper/A-Profile-Dependent-Kernel-Based-Regression-for-Camps-Valls-Soria-Olivas/f5d3b3a756e1d83dc4b07bfd7b5adeb21c8fdb43.

[429] G. Camps, M. Martınez, and E. Soria. "Fetal ECG extraction using an FIR neural network". In: *Computers in Cardiology. IEEE Computer Society Press*. 28. Rotterdam, The Netherlands, Sept. 2001, pp. 249–252.

[430] J. D. Martín-Guerrero, E. Soria-Olivas, J. J. Pérez-Ruixo, G. Camps-Valls, A. J. Serrano-López, J. R. Sepúlveda-Sanchis, and N. V. Jiménez-Torres. "Optimización de dosis de EPO en pacientes con anemia secundaria a insuficiencia renal crónica a través de la predicción del nivel de hemoglobina". In: *2nd International Congress of Nephrology in Internet*. Burgos, Spain, Nov. 2001. URL: http://www.uninet.edu/cin2001/html/index.html.

[431] J. D. Martín, V. Jiménez, J. Pérez-Ruixo, A. Serrano, A. Rosado, E. Soria, and G. Camps-Valls. "Erythropoietin Dosage Individualisation in Anemic Patients With Chronic Renal Failure". In: *Population Approach Group Europe (PAGE2001), ISSN 1871-6032*. Vol. Abstr 214. Basel, Suiza, June 2001. URL: http://www.page-meeting.org/.

[432] M. Martinez, J. Calpe, E. Soria, J. Guerrero, G. Camps, and L. Gomez. "Methods to evaluate the performance of fetal electrocardiogram extraction algorithms". In: *Computers in Cardiology 2001*. 2001, pp. 253–256. DOI: 10.1109/CIC.2001.977640.

[433] J. Sepulveda, E. Soria, G. Camps-Valls, Sanz, G. Marrugat, J., and L. Gómez. "Risk Assessment For Acute Myocardial Infarction Patients Using Artificial Neural Networks". In: *Computers in Cardiology, CINC'01. IEEE Computer Society Press*. 28. Rotterdam (Holanda), Sept. 2001, pp. 573–575.

[434] A. J. Serrano, J. D. Martín, V. Jiménez, J. J. Pérez-Ruixo, G. Camps-Valls, and E. Soria. "An Example of a Neural Network Like a Pharmacokinetic/Pharmacodynamic Model". In: *Population Approach Group Europe (PAGE2001), ISSN 1871-6032*. Vol. Abstr 216. Basel, Suiza, June 2001. URL: http://www.page-meeting.org/.

[435] A. J. Serrano, E. Soria, G. Camps-Valls, and J. D. Martín. "Some examples for solving Clinical Problems using Neural Networks". In: *6th International Work-Conference On Artificial and Natural Neural Networks. IWANN'2001*. Vol. 2085. Granada, Spain: Lecture Notes in Computer Science (LNCS). Springer-Verlag, June 2001, pp. 345–355.

[436] G. Camps-Valls, E. Soria, and N. V. Jiménez. "Artificial Neural Networks for the Classification of potentially Intoxicates Patients Treated with Digoxin". In: *Chicago 2000 World Congress on Medical Physics and Biomedical Engineering*. Chicago (Illinois), EE.UU., July 2000.

[437] G. Camps-Valls, E. Soria, N. V. Jiménez, J. D. Martín, A. J. Serrano, and B. Porta. "A Neural Approach to Ciclosporine dose Prediction". In: *Chicago 2000 World Congress on Medical Physics and Biomedical Engineering*. Chicago (Illinois), EE.UU., July 2000.

[438] J. Guerrero, M. P. López, J. Chorro, M. Martínez, G. Camps-Valls, and J. Ampudia. "Cross-correlation of the Heart Rate Variability and Ventricular Repolarization Duration in Diabetic Patients Affected by Autonomic Cardiovascular Neuropathy". In: *Chicago 2000 World Congress on Medical Physics and Biomedical Engineering*. Chicago (Illinois), EE.UU., July 2000.

[439] N. V. Jiménez, E. Soria, A. Albert, A. J. Serrano, and G. Camps. "Prediction of digoxin Plasma Potentially Toxic Levels by Using a Neural Network Model". In: *1999 Midyear Clinical Meeting. ASHP'99. American Society of Health-System Pharmacists*. Orlando (EEUU), Jan. 2000, p. 2277.

[440] J. D. Martín, E. Soria, N. V. Jiménez, G. Camps-Valls, A. J. Serrano, and J. Pérez Ruixo. "Nonlinear Prediction of rhEPO Dose by Using Neural Networks". In: *Chicago 2000 World Congress on Medical Physics and Biomedical Engineering*. Chicago (Illinois), EE.UU., July 2000.

[441] J. Guerrero, P. López, J. Chorro, M. Martínez, G. Camps-Valls, Magdalena, R. Rosado, A., and J. Ampudia. "Analysis of Heart Rate Variability In Diabetic Patients Affected By Autonomic Cardiovascular Neuropathy". In: *Computers in Cardiology 1999, CINC'1999. IEEE Computer Society Press*. Hannover, Germany, Sept. 1999, pp. 241–244.

[442] V. Jiménez, A. Albert, E. Soria, G. Camps, and A. J. Serrano. "Prediction of digoxin plasma potentially toxic levels by using a neural network model". In: *Proceedings of the ASHP 1999 Midyear Clinical Meeting*. Vol. Vol 52. Suppl. 4. Oct. 1999, p. 62. URL: https://scholar.google.es/scholar?hl=es&as_sdt=0%2C5&q=Prediction+of+digoxin+Plasma+Potentially+Toxic+Levels+by+Using+a+Neural+Network+Model&btnG=#d=gs_cit&t=1734295706611&u=%2Fscholar%3Fq%3Dinfo%3AQEhbt8rel-kJ%3Ascholar.google.com%2F%26output%3Dcite%26scirp%3D0%26hl%3Des.

[443] A. Rosado, J. Guerrero, A. Serrano, E. Soria, M. Martínez, and G. Camps. "Ventricular Fibrillation Detection Method Using Pseudo Wigner-Ville Time-Frequency Representation". In: *Fifth Conference of the European Society for Engineering & Medicine. ESEM'1999*. Barcelona, May 1999, pp. 379–380.

[444] E. Soria, G. Camps-Valls, A. J. Serrano, A. Albert, and N. V. Jiménez. "Aplicación informática para la identificación de pacientes con riesgo de intoxicación digitálica". In: *I Congreso Latinoamericano de Ingeniería Biomédica MAZATLáN '98*. Mazatlán, México, Nov. 1998, pp. 211–214.

[445] E. Soria, G. Camps-Valls, A. J. Serrano, J. Molina, J. D. Martín, and A. Albert. "Uso de redes neuronales en la clasificación de pacientes con riesgo de intoxicación por digoxina". In: *I Congreso Latinoamericano de Ingeniería Biomédica MAZATLáN '98*. Mazatlán, México, Nov. 1998, pp. 167–170.

[446] N. Mankovich, H. Durand, E. Diaz, G. Varando, and G. Camps-Valls. "Recovering Latent Confounders from High-dimensional Proxy Variables". In: Submitted. DOI: https://doi.org/10.48550/arXiv.2403.14228.

Invited Talks

[1] G. Camps-Valls. *Advances in Representation Learning for Earth Observation*. Invited Speaker. Copenhagen, Denmark, 2025. URL: https://climateainordics.com/events/2025-09-29-reo-eurips-workshop/.

[2] G. Camps-Valls. *AI for Earth and Climate: From satellite pixels to causal insights for effective action*. Joint webinar with Markus Reichstein. Online, 2025. URL: https://www.bgc-jena.mpg.de/events/41705/4857425.

[3] G. Camps-Valls. *Blaise Pascal Medal Keynote: Physics-aware Machine Learning for the Climate*. Keynote lecture following the award of the Blaise Pascal Medal. CERN, Geneva, Switzerland, 2025.

[4] G. Camps-Valls. *Harnessing Digital Innovation for Resilience in the Context of Climate Change*. High-level respondent/speaker. UN Headquarters, New York, USA, 2024. URL: https://sdgs.un.org/tfm/STIForum2024.

[5] G. Camps-Valls. *Hybrid and Causal ML in the Earth sciences*. Online, 2024.

[6] G. Camps-Valls. *IA para unas Ciencias de la Tierra sostenibles*. València, 2024.

[7] G. Camps-Valls. *Physics-aware Machine learning for Earth observation*. Invited Talk. Vancouver, Canada, 2024.

[8] G. Camps-Valls. *A collective AI agenda for Earth Observation*. Barcelona, Feb. 2023.

[9] G. Camps-Valls. *Advancing AI for Urban Sustainability*. Heraklion Crete, Greece, May 2023.

[10] G. Camps-Valls. *AI for Sustainable Earth Sciences*. Alacant, 2023.

[11] G. Camps-Valls. *AI for the Earth sciences*. Vienna, Austria, 2023.

[12] G. Camps-Valls. *Causal Inference for Disaster Management*. Frascati, Italy, May 2023.

[13] G. Camps-Valls. *Graphs in State-Space Models for Granger Causality in Climate Science*. Paris, Apr. 2023.

[14] G. Camps-Valls. *Hybrid and Causal ML in the Earth sciences*. London, UK, Nov. 2023.

[15] G. Camps-Valls. *Living in the ML-Physics Interplay for the Earth sciences*. Cambridge, UK, Nov. 2023.

[16] G. Camps-Valls. *Machine learning for modeling and understanding the Earth system*. Ljubljana, Slovenia, 2023.

[17] G. Camps-Valls. *The role of AI in Digital Twins*. Leiden, NL, Feb. 2023.

[18] G. Camps-Valls. *A collective agenda for AI on the Earth sciences*. Online talk - ITU-UN AI4Good seminar series, Feb. 2022.

[19] G. Camps-Valls. *Advancing AI for modeling and understanding the Earth system*. E4C - Institut Polytechnique de Paris, May 2022.

[20] G. Camps-Valls. *Advancing AI for modeling and understanding the Earth system*. Stockholm, Sweden, Sept. 2022.

[21] G. Camps-Valls. *Physics-aware Machine Learning for Earth Observation*. New Orleans, Dec. 2022.

[22] G. Camps-Valls. *Advances in Machine Learning for Modelling and Understanding in Earth Sciences*. Online talk, Sept. 2021.

[23] G. Camps-Valls. *Advances in Machine Learning for Modelling and Understanding in Earth Sciences*. Online talk, Italy, Jan. 2021.

[24] G. Camps-Valls. *Gaussianizing the Earth*. Online talk, Nov. 2021.

[25] G. Camps-Valls. *Interpretability and Causality in Earth Sciences (aka "fitting is not enough")*. Online talk, Sept. 2021.

[26] G. Camps-Valls. *Living in the Physics and Machine Learning Interplay for the Earth Sciences*. Online talk, Zurich, May 2021.

[27] G. Camps-Valls. *Machine Learning for Earth and Climate Sciences*. Online talk, Oct. 2021.

[28] G. Camps-Valls. *Physics-aware Interpretable Machine learning in the Earth sciences*. Online talk, France, May 2021.

[29] G. Camps-Valls. *Physics-aware machine learning and causality for the Earth sciences*. Online talk, Nov. 2021.

[30] G. Camps-Valls. *Physics-aware Machine Learning for the Earth sciences*. Online talk, https://www.climatechange.ai/, Sept. 2021.

[31] G. Camps-Valls. *Physics Aware Machine Learning for the Earth Sciences*. Online talk, Lisboa, May 2021.

[32] I. Papoutsis, A. Baglatzi, S. Touloumtzi, M. Reichstein, N. Carvalhais, F. Gans, G. Camps-Valls, M. Piles, T. Kakantousis, J. Dowling, M. Koubarakis, D. Bilidas, D.-A. Pantazi, G. Stamoulis, C. Demange, L.-G. Journel, M. Bianchi, C. Gervasi, A. Rucci, I. Tsampoulatidis, E. Kamateri, T. Habib, A. D. Bolívar, Z. Ntasiou, and A. Paschalis. *DeepCube: Explainable AI Pipelines for Big Copernicus data*. Online Everywhere, https://www.bigdatafromspace2021.org/, May 2021.

[33] G. Camps-Valls, M. Reichstein, Z. Zhu, and D. Tuia. *Advancing Deep Learning For Earth Sciences: From Hybrid Modeling To Interpretability*. Waikoloa, Hawaii, USA, July 2020.

[34] G. Camps-Valls, M. Reichstein, Z. Zhu, and D. Tuia. *Advancing Deep Learning For Earth Sciences: From Hybrid Modeling To Interpretability*. Waikoloa, Hawaii, USA, July 2020.

[35] G. Camps-Valls, D. H. Svendsen, J. Cortes-Andres, A. Moreno-Martínez, A. Pérez-Suay, J. Adsuara, I. Martin, M. Piles, J. Muñoz Marí, and L. Martino. *Living in the Physics – Machine Learning Interplay for Earth Observation*. June 2020.

[36] G. Camps-Valls, D. H. Svendsen, J. Cortes-Andres, A. Moreno-Martínez, A. Pérez-Suay, J. Adsuara, I. Martin, M. Piles, J. Muñoz Marí, and L. Martino. *Living in the Physics – Machine Learning Interplay for Earth Observation*. 2020.

[37] G. Camps-Valls. *Advances in Machine Learning for Earth Observation*. Dept Geography – University of Zurich, Switzerland, Apr. 2020.

[38] G. Camps-Valls. *Advances in Machine Learning for Earth Sciences*. Online Everywhere, https://www.conferencemanager.dk/sustainableai/conference/, Dec. 2020.

[39] G. Camps-Valls. *Advances in Machine Learning for Earth Sciences*. UGent Data Science Seminar – University of Ghent, Belgium, Feb. 2020.

[40] G. Camps-Valls. *Advances in Machine learning for Modelling and Understanding in Earth Sciences*. Severo Ochoa Research Seminars – Barcelona Supercomputing Center (BSC), Barcelona, Jan. 2020.

[41] G. Camps-Valls. *How to Surf the Physics and Machine Learning Interplay*. Online Everywhere, https://www.mlse2020.com/earth, Dec. 2020.

[42] G. Camps-Valls. *Living in the Physics and Machine Learning Interplay - An AI agenda with examples for the DTE*. ESA-ESRIN, Italy, Sept. 2020.

[43] G. Camps-Valls. *Living in the Physics and Machine Learning Interplay - An AI agenda with examples for the DTE*. ESA-ESRIN, Italy, Sept. 2020.

[44] G. Camps-Valls. *Living in the Physics-Machine learning interplay for earth observation*. Online Everywhere, https://www.ingarss2020.org/, Dec. 2020.

[45] G. Camps-Valls. *Advances in Machine Learning for Earth Observation*. CEPT, Ahmedabad, India, June 2019.

[46] G. Camps-Valls. *Advances in Machine Learning for Earth Observation*. ESA BIDs 2019, Feb. 2019.

[47] G. Camps-Valls. *Learning nonlinear feature representations from Earth data*. EGU 2019, Apr. 2019.

[48] G. Camps-Valls. *Machine Learning for Earth Observation*. Cavanilles Institute of Biodiversity and Evolutionary Biology, Valencia, Mar. 2019.

[49] G. Camps-Valls. *Multivariate Gaussianization: Information Bottleneck and Flows*. Technical University of Berlin, Germany, Oct. 2019.

[50] G. Camps-Valls. *New Machine Learning for Earth and Climate Sciences*. ISI, Mumbai, India, June 2019.

[51] G. Camps-Valls. *Physics-aware Machine Learning and Causal Inferece in Earth and Climate Sciences*. ISI, Bangalore, India, July 2019.

[52] G. Camps-Valls. *Physics-aware Machine Learning for Earth Observation*. Wageningen University and Research, Wageningen, The Netherlands, Sept. 2019.

[53] G. Camps-Valls. *Revisiting global teleconnections of ENSO over soils and vegetation*. ESA Living Planet Symposium, 2019, May 2019.

[54] G. Camps-Valls. *Towards Physics-aware Machine Learning for Earth Observation*. Indian Statistical Institute, Kalkota, India, July 2019.

[55] G. Camps-Valls. *From sparsity to Gaussianization in neural networks*. Department of Engineering Mathematics, University of Bristol, UK, Oct. 2018.

[56] G. Camps-Valls. *Gaussianization, Independence, Fairness*. Oxford, Dep. Statistics, July 2018.

[57] G. Camps-Valls. *HyperLabelMe: Benchmarking Image Classifiers*. The Phi-week - EO Open Science and Future EO - ESA-ESRIN, Italy, Nov. 2018.

[58] G. Camps-Valls. *Machine Learning for Climate: 15 ways to leave your lover*. Machine Learning and Climate Workshop 2018 - Oxford, UK, Oct. 2018.

[59] G. Camps-Valls. *Machine learning for Earth Observation*. Climathon KIC. Universitat de València, Oct. 2018.

[60] G. Camps-Valls. *Neural networks, Gaussianization, and information distillation*. Digital Globe, Denver, US, Sept. 2018.

[61] G. Camps-Valls. *Physics-aware And Explainable Machine Learning*. The Phi-week - EO Open Science and Future EO - ESA-ESRIN, Italy, Nov. 2018.

[62] G. Camps-Valls. *Physics-driven Gaussian Processes for Earth Observation*. Imperial College London, UK, Oct. 2018.

[63] G. Camps-Valls. *Unsupervised Deep Feature Learning with Sparse Codes and Gaussianization*. NCAR, Boulder, US, Sept. 2018.

[64] G. Camps-Valls. *Unsupervised Deep Networks: Neural networks, Gaussianization, and information distillation*. Colorado State University, Fort Collins, US, Sept. 2018.

[65] G. Camps-Valls. *Unsupervised Deep Networks: Sparsity, Gaussianization, and the information bottleneck*. Descartes Labs, Santa Fe, US, Sept. 2018.

[66] G. Camps-Valls, J. Johnson, V. Laparra, D. Bueso, G. Brandt, N. Fomferra, H. Permana, and M. Mahecha. *Statistical Distillation of the Earth System Data Cube*. The Phi-week - EO Open Science and Future EO - ESA-ESRIN, Italy, Nov. 2018.

[67] G. Camps-Valls. *Potential of Machine Learning for FLUXCOM upscaling*. MPI BGC - FLUXCOM workshop. Jena, Germany, May 2017, 2017.

[68] G. Camps-Valls. *Vegetation Monitoring with Gaussian Processes and Latent Force Models*. EGU17 - Vienna, Austria, 23-28 April 2017, 2017.

[69] G Camps-Valls, L Gómez-Chova, G Mateo, V Laparra, A Pérez-Suay, and J Muñoz Marí. *Large Scale Gaussian Processes for Atmospheric Parameter Retrieval and Cloud Screening*. New Orleans, USA, 11-15 December 2017, 2017.

[70] G Camps-Valls, J Verrelst, L Martino, and J Vicent. *Advanced Machine Learning Emulators of Radiative Transfer Models*. New Orleans, USA, 11-15 December 2017, 2017.

[71] G. Camps-Valls. *Advanced Machine Learning for Biophysical Parameter Retrieval*. IEEE Distinguished Lecturer - Rio de Janeiro, Brasil, Nov. 2017.

[72] G. Camps-Valls. *Machine Learning in Remote Sensing*. IEEE Distinguished Lecturer - Campinas, Brasil, Nov. 2017.

[73] G. Camps-Valls. *Open problems in remote sensing*. Causality in Complex Systems - Amsterdam Soesterberg, The Netherlands, June 2017.

[74] G. Camps-Valls. *Physics-Aware Gaussian Processes for Earth Observation*. SCIA17 - Tromsø, Norway, June 2017.

[75] G. Camps-Valls. *Physics-aware machine learning for biophysical parameter retrieval*. BACI meeting - Jena, Germany, June 2017.

[76] L. Martino, D. Luengo, and G. Camps-Valls. *Latent Force Models for Model-Data Integration in Vegetation Monitoring*. EARSeL17 - 19-21 April 2017, University of Zurich (Switzerland), 2017.

[77] A. Moreno-Martínez, G. Camps-Valls, N. Carvalhais, J. Kattge, N. Robinson, M. Reichstein, B. Allred, and S. Running. *Mapping wood density globally using remote sensing and climatological data*. New Orleans, USA, 11-15 December 2017, 2017.

[78] G. Camps-Valls. *Domain Adaptation with the Kernel Manifold Alignment*. Computer Science Dep. Universidad Autonoma de Madrid, Spain, 2016.

[79] G. Camps-Valls. *Machine learning for Remote Sensing*. TUM-DLR Summer School, Munich, Germany, 2016.

[80] G. Camps-Valls. *Monitoring Vegetation From Space with Gaussian Processes and Latent Force Models*. Seville, Spain, Dec. 2016.

[81] G. Camps-Valls. *Semisupervised manifold alignment with kernels*. Institute of Science and Technology Austria, 2016.

[82] G. Camps-Valls. *Kernel manifold alignment*. StatLearn conference, Grenoble, France, 2015.

[83] G. Camps-Valls. *Learning Structures in Earth Observation Data with Gaussian Processes*. ECML Time series Workshop, Porto, Portugal, 2015.

[84] G. Camps-Valls. *Monitoring Earth Climate Variables with Statistical Inference*. CVPR EarthVision Workshop, Boston, USA, 2015.

[85] G. Camps-Valls. *The role of modern machine learning in Earth observation*. MPI-Biogeochemistry, Jena, Germany, 2015.

[86] G. Camps-Valls. *Advances in Kernel Methods for Remote Sensing Image Processing*. Keynote speaker at the SIU conference, Trabzon, Turkey, 2014.

[87] G. Camps-Valls. *Hyperspectral image processing*. València, Spain, 2014.

[88] G. Camps-Valls. *Kernel methods for hyperspectral image processing*. Lausanne, Switzerland, 2014.

[89] G. Camps-Valls. *Advances in Kernel Image Processing*. Keynote speaker at the Conference on Image Processing and Pattern Recognition, NOBIM. Oslo, Norway, 2013.

[90] G. Camps-Valls. *Back to the 60s: Kernel Methods to Deep Neural Networks in Remote Sensing Data Processing*. IMA Hot Topics Workshop - Imaging in Geospatial Applications, University of Minnessota, USA, 2013.

[91] G. Camps-Valls. *Recent machine learning developments for remote sensing data processing*. MPI for Biogeochemistry, Jena, Germany, 2013.

[92] G. Camps-Valls. *Extended Kernel Methods*. Computing and Informatics Seminars, Univ. Bournemouth, UK, 2012.

[93] G. Camps-Valls. *Iterative Gaussianization Framework for Image Processing*. Computer Vision Center, Barcelona, 2012.

[94] G. Camps-Valls. *Kernel Signal-To-Noise Ratio for Machine Learning*. Computer Vision Center, Barcelona, 2012.

[95] G. Camps-Valls. *Multivariate Gaussianization for data processing*. Nice, France, 2012.

[96] G. Camps-Valls. *Statistical Learning in Earth Monitoring*. EPFL, Lausanne, Switzerland, 2012.

[97] G. Camps-Valls. *SVM for remote sensing image classification: tricks of the trade*. Keynote speaker at the SPIE Conf. on signal and image processing. Prague, Czech Rep., 2011.

[98] G. Camps-Valls. *Iterative Gaussianization Framework*. GIPSA lab: Grenoble Inst. Tech (France), 2009.

[99] G. Camps-Valls. *Natural Image Relations in Denoising*. MPI for Biological Cybernetics, Tübingen, Germany, 2009.

[100] G. Camps-Valls. *Natural Image Relations in Kernel-based Image Denoising*. Max Planck Institute for Biological Cybernetics, Tübingen, Germany, 2009.

[101] G. Camps-Valls. *Kernel Classifiers in Remote Sensing*. University of Lausanne, Switzerland, 2008, 2008.

[102] G. Camps-Valls. *Kernel-based Data Fusion*. ITN network: HYPER-I-NET School on Hyperspectral Imaging. Cáceres, Spain, 2007.

[103] G. Camps-Valls. *Kernel methods in Bioinformatics*. Stockholm Bioinformatics Center (SBC). Stockholm, Sweden, 2006.

[104] G. Camps-Valls. *Kernel Methods in Remote Sensing: Introduction, Applications and Research Opportunities*. Max Planck Institute (Tübingen, Germany), 2005.

Books

[1] G. Camps-Valls, D. Tuia, X. X. Zhu, and M. Reichstein. *Deep Learning for the Earth Sciences: A Comprehensive Approach to Remote Sensing, Climate Science and Geosciences*. Wiley & Sons, 2021. ISBN: 9781119646143.

[2] J. Rojo-Álvarez, M. Martínez-Ramón, J. Muñoz-Marí, and G. Camps-Valls. *Digital Signal Processing with Kernel Methods*. UK: Wiley & Sons, 2018. ISBN: 978-1118611791.

[3] G. Camps-Valls, D. Tuia, L. Gómez-Chova, S. Jiménez, and J. Malo. *Remote Sensing Image Processing*. Morgan & Claypool Publishers, 2011. ISBN: 1608458199.

[4] G. Camps-Valls and L. Bruzzone. *Kernel Methods for Remote Sensing Data Analysis*. UK: Wiley & Sons, 2009. ISBN: 978-0-470-72211-4.

[5] G. Camps-Valls, J. L. Rojo-Álvarez, and M. Martínez-Ramón. *Kernel Methods in Bioengineering, Signal and Image Processing*. Hershey, PA, USA: Idea Group Publishing, 2007. ISBN: 1-559904-042-5.

Book Chapters

[1] E. Izquierdo-Verdiguier, V. Laparra, J. Muñoz-Marí, and G. Camps-Valls. "Advanced Feature Extraction for Earth Observation Data Processing". In: *Comprehensive Remote Sensing*. 2nd. Vol. 2. Elsevier, 2025, V2:38–V2:63.

[2] J. E. Adsuara, M. Campos-Taberner, J. García-Haro, C. Gatta, A. Romero, and G. Camps-Valls. "Learning Unsupervised Feature Representations of Remote Sensing Data with Sparse Convolutional Networks". In: *Deep Learning for the Earth Sciences*. Wiley & Sons, 2021, pp. 13–23.

[3] G. Camps-Valls. "Perspective on Deep Learning for Earth Sciences". In: *Generalization with Deep Learning*. World Scientific Pub Co Inc, 2021, pp. 159–173. ISBN: 978-9811218835.

[4] M. Reichstein, B. Ahrens, B. Kraft, G. Camps-Valls, N. Carvalhais, F. Gans, P. Gentine, and A. Winkler. "Combining System Modeling and Machine Learning into Hybrid Ecosystem Modeling". In: *Science-Guided Machine Learning*. Data Mining and Knowledge Discovery Series, CRC Press, 2021.

[5] G. Camps-Valls, L. Gómez-Chova, V. Laparra, L. Martino, G. Mateo-García, J. Muñoz-Marí, D. H. Svendsen, and J. Verrelst. "Statistical Biophysical Parameter Retrieval and Emulation with Gaussian Processes". In: *Hyperspectral Imaging*. Vol. 32. Data Handling in Science and Technology. Elsevier, 2020, pp. 333–368. DOI: 10.1016/B978-0-444-63977-6.00015-8.

[6] E. Izquierdo, V. Laparra, J. Muñoz-Marí, L. Gómez-Chova, and G. Camps-Valls. "Feature Extraction in Earth Observation Data Processing". In: *Comprehensive Remote Sensing*. Elsevier, 2017.

[7] D. Tuia, M. Volpi, J. Verrelst, and G. Camps-Valls. "Advances in Kernel Machines for Image Classification and Biophysical Parameter Retrieval". In: *Mathematical Models for Remote Sensing Image Processing*. Springer Verlag, 2017.

[8] L. Gómez-Chova, J. Muñoz-Marí, V. Laparra, J. Malo-López, and G. Camps-Valls. "A Review of Kernel Methods in Remote Sensing Data Analysis". In: *Optical Remote Sensing – Advances in Signal Processing and Exploitation Techniques*. Springer Berlin Heidelberg, 2011, pp. 171–206. DOI: 10.1007/978-3-642-14212-3_10.

[9] G. Camps-Valls and J. F. Guerrero-Martínez. "Neural Networks in ECG Classification: What is Next in Adaptive Systems?" In: *Neural Networks in Healthcare: Potential and Challenges*. Ed. by J. Kamruzzaman, R. K. Begg, and R. A. Sarker. Idea Group Inc., 2006, pp. 81–104. ISBN: 1-59140-848-2.

Teaching, Training and Dissemination

Over more than two decades at the Universitat de València (1998–2019), I taught 18 courses at Bachelor's, Master's, and doctoral levels in Electrical Engineering, Earth Sciences, and Computer Science—covering digital signal processing, analog electronics, image processing, machine learning for remote sensing, and time series analysis—and at the Université de Lausanne (2007–2009) and the Universitat Autònoma de Barcelona (2010–2014). Since 2019, teaching has shifted to advanced doctoral and postgraduate training through the ISP group's intensive schools, seminars, and tutorials (isp.uv.es/courses.html), covering deep learning for Earth observation, causal inference in climate science, physics-aware machine learning, and AI for geosciences. As IEEE GRSS Distinguished Lecturer (2017–2019) I gave lectures worldwide; I have delivered 140+ invited talks, keynotes, and tutorials at premier venues—NeurIPS, ICML, ECML, AGU, EGU, IGARSS, CVPR, ESA training courses—and gave the Blaise Pascal Medal keynote (2025). I served as General Chair (IEEE MLSP 2012) and Technical Chair (IEEE IGARSS 2018, València). *Metrics:* 18 courses taught, average student evaluation 7.28/10 (8.27/10 in 2012–2019); 13 teaching-oriented books with ISBN; 13 education journal articles; 14 teaching-focused conference papers; 36 postgraduate and 9 non-university courses; 20 completed PhD theses and 6 ongoing PhDs supervised; 40+ master's theses; 7 teacher-training programs attended.

PhD Thesis Supervision

I have supervised $40+$ master students and 20 completed doctoral theses, and am currently co-advising 6 PhD students. In the last 5 years I served on examination committees for 20+ PhD candidates across Europe (EPFL, Paris Mines, Tromsø, Madrid, Trento, etc.). Many alumni hold leading positions in academia and industry worldwide; see isp.uv.es/people.html for the full alumni list.

PhD Theses (Completed and Ongoing)

[1] D. Bassotto. "Causal characterization of extreme events". E. Diaz and G. Camps-Valls (advisors). TBD 2026.

[2] J. Cerdà. "Causal effect estimation to study food insecurity". Vassilis Sitokonstantinou and G. Camps-Valls (advisors). TBD 2026.

[3] K.-H. Cohrs. "Characterization of hybrid machine learning". G. Camps-Valls and M. Reichstein (advisors). TBD 2026.

[4] H. Durand. "Learning causal representations of the Earth system". G. Varando and G. Camps-Valls (advisors). TBD 2026.

[5] M. Gonzalez. "Anomaly and extreme event detection with attention networks". M. A. Fernandez-Torres and G. Camps-Valls (advisors). PhD thesis. Universitat de València, Spain, TBD 2026.

[6] L. Martinez. "High resolution Products for better quantifying the terrestrial biosphere". A. Moreno and G. Camps-Valls (advisors). PhD thesis. Universitat de València, Spain, 2026.

[7] F. Muller. "Forest disturbance classification using deep learning approaches". A. Bastos, A. Moreno and G. Camps-Valls (advisors). TBD 2026.

[8] P. Pelucchi. "Physics-aware and explainable ML for dust and cloud properties retrieval". G. Camps-Valls and Jorge Vicent (advisors). PhD thesis. Universitat de València, Spain and University of Oxford, UK, 2026.

[9] J. M. Tarraga. "Causal inference in the human-biosphere coupled system". M. Piles and G. Camps-Valls (advisors). PhD thesis. Universitat de València, Spain, TBD 2026.

[10] T. Williams. "Persistence in European Vegetation". G. Camps-Valls, A. Moreno and M. Mahecha (advisors). TBD 2026.

[11] M. Zhang. "Physics-Aware Deep Learning Models for Drought Monitor and Prediction Based on Multi-Source Observational Data". G. Camps-Valls and (advisors). PhD thesis. Universitat de València, Spain and Hohai University, China, TBD 2026.

[12] J. Cortes. "Machine learning for detection and attribution of climate extremes". M. A. Fernandez-Torres and G. Camps-Valls (advisors). PhD thesis. Universitat de València, Spain, 2025.

[13] S. Kondylatos. "Bayesian Neural Networks in EO". I. Papotsis and G. Camps-Valls (advisors). PhD thesis. NOA, Athens and Universitat de València, Spain, TBD 2025.

[14] I. Prapas. "Deep Learning for Fire Danger Forecasting using Earth Observation Data". I. Papotsis and G. Camps-Valls (advisors). PhD thesis. NOA, Athens and Universitat de València, Spain, TBD 2025.

[15] C. Radin. "Machine learning for sea level variability forecasting and impact assessment". V. Nieves and A. B. Ruescas (advisors). PhD thesis. Universitat de València, Spain, 2025.

[16] J. G. Villarreal. "Detection of aerosol-cloud interactions in observations space". Johannes Quaas and G. Camps-Valls (advisors). PhD thesis. University of Leipzig, Germany and Universitat de València, Spain, 2025.

[17] E. Diaz. "Advances in causal inference for geoscience and remote sensing". Gustau Camps-Valls and Valero Laparra (advisors). PhD thesis. Universitat de València, Spain: Universitat de València, Spain, 2024.

[18] A. Mateo. "Advances in machine learning for remote sensing crop yield predction". Maria Piles, Jordi Muñoz-Marí, Gustau Camps-Valls (advisors). PhD thesis. Universitat de València, Spain: Universitat de València, Spain, 2023.

[19] E. J. Johnson. "Estimating Information in Earth System Data with Machine Learning". Gustau Camps-Valls and Valero Laparra (advisors). PhD thesis. Universitat de València, Spain: Universitat de València, Spain, 2021.

[20] G. Kraemer. "Changes in the coupled Biosphere-Human System". Miguel Mahecha, Markus Reichstein, Gustau Camps-Valls (advisors). PhD thesis. Universitat de València, Spain: PhD Universitat de València, Spain, 2020.

[21] D. Svendsen. "Integrating Physics Modelling with Machine Learning for Remote Sensing". Gustau Camps-Valls and Luca Martino (advisors). PhD thesis. Universitat de València, Spain: PhD Universitat de València, Spain, 2020.

[22] M. Campos-Taberner. "Development of an earth observation processing chain for crop biophysical parameters at local and global scale". F.J- García-Haro and G. Camps-Valls (advisors). PhD thesis. Universitat de València, Spain: PhD in Remote Sensing, Universitat de València, Spain, 2017.

[23] V. Laparra. "Learning efficient image representations: Conections between statistics and neuroscience". J. Malo and G. Camps-Valls (advisors). PhD thesis. Universitat de València, Spain: Universitat de València, Spain, 2013.

[24] L. Capobianco. "Advances in Hyperspectral Kernel screening algorithm Target Detection". A. Garzelli and G. Camps-Valls (advisors). PhD thesis. Universita degli Studi di Siena, Italy: Universita degli Studi di Siena, Italy, 2009.

[25] J. G. Sanchis. "Desarrollo de técnicas avanzadas para la detección de defectos superficiales peligrosos en cítricos basadas en imágenes hiperespectrales". J. Blasco Ivars and G. Camps-Valls (advisors). PhD thesis. Universitat de València, Spain: Universitat de València, Spain, 2009.

[26] L. G. Chova. "Cloud screening algorithm for MERIS and CHRIS satellite sensors". G. Camps-Valls and J. Calpe (advisors). PhD thesis. Universitat de València, Spain: Universitat de València, Spain, 2008.

[27] N. V. Jiménez, E. Soria, A. Albert, A. J. Serrano, and G. Camps. "Prediction of digoxin Plasma Potentially Toxic Levels by Using a Neural Network Model". Oct. 1999.

Educational publications

- **Books**

1. E. Soria, M. Martínez, J. V. Francés, G. Camps-Valls, *Problemas De Tratamiento Digital De Señales*. Prentice Hall, Serie Prentice/Practica, 1a edición, 2003, ISBN: 84-205-3559-1.
2. J. Espí López, G. Camps-Valls, J Muñoz-Marí, *Electrónica Analógica. Problemas y Cuestiones*. Prentice Hall, Serie Prentice/Practica, 1a edición, 2006, ISBN: 84-8322-327-9.
3. J. Espí López, J. Muñoz-Marí, G. Camps-Valls, *Análisis de Circuitos*. Publicaciones de la Universidad de Valencia (PUV), 1a edición, 2006, ISBN: 84-370-6527-5.
4. J. Espí López, G. Camps-Valls, J Muñoz-Marí, *Fundamentos de Electrónica Analógica*. Publicaciones de la

Universidad de Valencia (PUV), 1a edición, 2006, ISBN: 84-370-6560-7.

5. J. Espí López, G Camps-Valls, R. Magdalena, *Sintesis de Redes: impedancias y filtros*. Delta Publicaciones, SA, 1a edición, 2008, ISBN: 849245301X.

- **Dissemination journal papers**

1. E. Soria, J. Calpe, J. Chambers, M. Martínez, G. Camps-Valls, J. D. Martín-Guerrero, A novel approach to introducing adaptive filters based on the LMS algorithm and its variants, *IEEE Transactions on Education*, 47(1):127–133, April 2004, *JCR=0.526*.
2. J. D. Martín-Guerrero, L. Gómez-Chova, G. Camps-Valls, A.J. Serrano, J. Vila-Frances, J. Calpe-Maravilla, E. Soria-Olivas, Channel equalisation using a soft back-propagation learning algorithm, *Journal of Electrical Engineering*, 55(5-6):156–160, 2004.
3. G. Camps-Valls, New machine-learning paradigm provides advantages for remote sensing, *SPIE Newsroom*, July 2008.
4. J. Torres, G. Camps, V. González, E. Sanchis, A. J. Serrano, G. Torralba, Modelado de un filtro de Wiener. Implementación mediante FPGA, *Mundo Electrónico, ISSN 0300-3787*, 21(347):50–55, 2003.

- **Dissemination conferences papers**

1. E. Soria, G. Camps-Valls, A.J. Serrano, J.V. Francés, R. Magdalena, A. Albert, N.V. Jiménez, Aplicación informática para la identificación de pacientes con riesgo de intoxicación por digoxina, *XVI Congreso Anual de la Sociedad Española de Ingeniería Biomédica*, Págs. 353–356, Valencia, Sep 1998.
2. N.V. Jiménez, A. Albert, E. Soria, G. Camps-Valls, A. J. Serrano, Herramienta informática basada en redes neuronales artificiales para la prevención de toxicidad por digoxina, *II Congreso Nacional de Informática y Farmacia. Inforfarma-99*, Sevilla, Oct 1999.
3. A. Herreros, A.J. Serrano, E. Soria, G. Camps-Valls, M. Martínez, Aplicación de Support Vector Machines al problema de intoxicación por digoxina, *III Congreso de Usuarios de Matlab'99*, Págs. 313–317, Madrid, Nov 1999.
4. A. J. Serrano, M. Martínez, G. Camps-Valls, A. Rosado, Comparativa del coste computacional de aplicaciones en MATLAB, MIDEVA y ficheros C-MEX, *Congreso de usuarios de Matlab'99*, Págs. 509–513, Madrid, Nov 1999.
5. M. Martínez, G. Camps-Valls, J. Guerrero, A. Rosado, A.J. Serrano, J. Chorro, Obtención de series RR en registros Holter, *Congreso de usuarios de Matlab'99*, Págs. 481–485, Madrid, Nov 1999.
6. J. Modia, G. Camps-Valls, A.J. Serrano, J. D. Martín, Limpieza de imágenes con ruido aleatorio mediante la detección de tramas aisladas, *Congreso de usuarios de Matlab'99*, Págs. 451–457, Madrid, Nov 1999.
7. J. F. Guerrero Martínez, M. Martínez, G. Camps-Valls, J. Chorro, E. Soria, A. J. Serrano, Procesado de series temporales RR en registros Holter, *Congreso de usuarios de Matlab'99*, Págs. 487–489, Madrid, Nov 1999.
8. E. Soria, A. J. Serrano, G. Camps-Valls, J. D. Martín, R. Magdalena, Aplicación de *applets* JAVA a la enseñanza de redes neuronales artificiales, *IV Congreso de Tecnologías Aplicadas a la Enseñanza de la Electronica. TAEE'2000*, Págs. 295–298, Barcelona, Sep 2000.
9. J.D. Martín, E. Soria, J. Calpe, A.J. Serrano, G. Camps, Nuevo algoritmo para la clasificación difusa en redes neuronales aplicado en la reconstrucción de señales binarias, *Seminario Anual de Automática, Electrónica Industrial e Instrumentación. SAAEI'2000*, Terrassa, Sep 2000.
10. S. Saez, E. Soria, G. Camps-Valls, A.J. Serrano, J.D. Martín, N.V. Jiménez, Aplicación informática basada en redes neuronales temporales para problemas de farmacocinética clínica, *XVIII Congreso Anual de la Sociedad Española de Ingeniería Biomédica, CASEIB'2000*, Págs. 235–237, Cartagena, Sep 2000.
11. E. Soria Olivas, G. Camps-Valls, A. J. Serrano López, J. D. Martín Guerrero, N. V. Jiménez Torres, Desarrollo de aplicaciónes informáticas basadas en redes neuronales para su aplicación en ciencias de la salud, *Informática Medica, Informed'2000*, Págs. 253–261, Toledo, Oct 2000.
12. R. Niclós, G Sòria, G. Camps-Valls, B. Martínez, E. Cassiraga, E. Valor, La enseñanza de técnicas de procesado de imagen en teledetección, *Reunión de Docentes de Teledetección*, Ávila, Mar 2011.

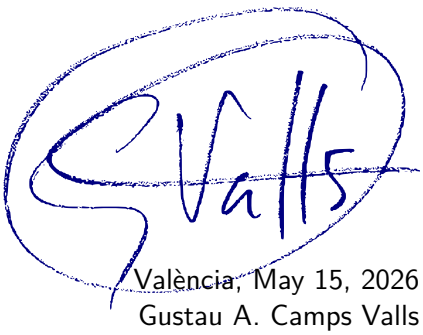
- **Material for specific courses.** Through the years I edited specific material for many Master's and PhD courses: "Notes on Digital Signal Processing", "Design of Control Systems Using MATLAB-SIMULINK", "Digital Signal Processing Laboratory Manual", "Time Series Prediction Notes", "CAD Techniques Notes: Design with OrCAD: Capture & Layout. Digital Signal Processing Laboratory Manual", "Analog Electronics I Notes", "Analog Electronics I Laboratory Notes", "Theory of Electrical Networks Notes", "Analysis and Information Extraction", "Image Processing", "Statistical Signal Processing", "Hyperspectral image processing", etc. Some are available at `https://www.uv.es/gcamps/teaching.html`, AulaVirtual of the University of Valencia, and in the training section of the research group

Image and Signal Processing (ISP) at https://isp.uv.es/courses.html.

Dissemination activities

The dissemination of scientific activities in my group is crucial. Key strategies include:

1. *Publication in International Journals and Conferences:*
   - Works published in high-impact journals (Nature, Science Advances, PNAS, PLOS One).
   - Presentation in relevant conferences (NeurIPS, ICML, ECML, AGU, EGU, IGARSS, ECVP, ECCV, Climate Informatics).
2. *Attracting Stakeholders:*
   - Active participation in ELLIS and its 'Machine Learning for Earth and Climate Sciences' program.
   - Involvement in networks of excellence, COST actions, ERC Synergy Grant (USMILE), and collaboration with ESA and European Space Science (ESC).
   - Dissemination through workshops within ELLIS, influencing space agencies and organizations.
3. *A Societal Compromise:*
   - Dissemination at various levels, including engagement with kids and schools, participation in discussion panels, and active presence on social networks.
4. *Curating Data and Toolboxes:*
   - Releasing code/toolboxes and curated datasets under Findable, Accessible, Interoperable, and Reusable (FAIR) principles.
   - Open access and free publication of software and data via the dedicated GitHub site in ISP.



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