ForcesUniverse @Napoli

Wolfgang Mück

Università di Napoli “Federico II”
and INFN, Sezione di Napoli

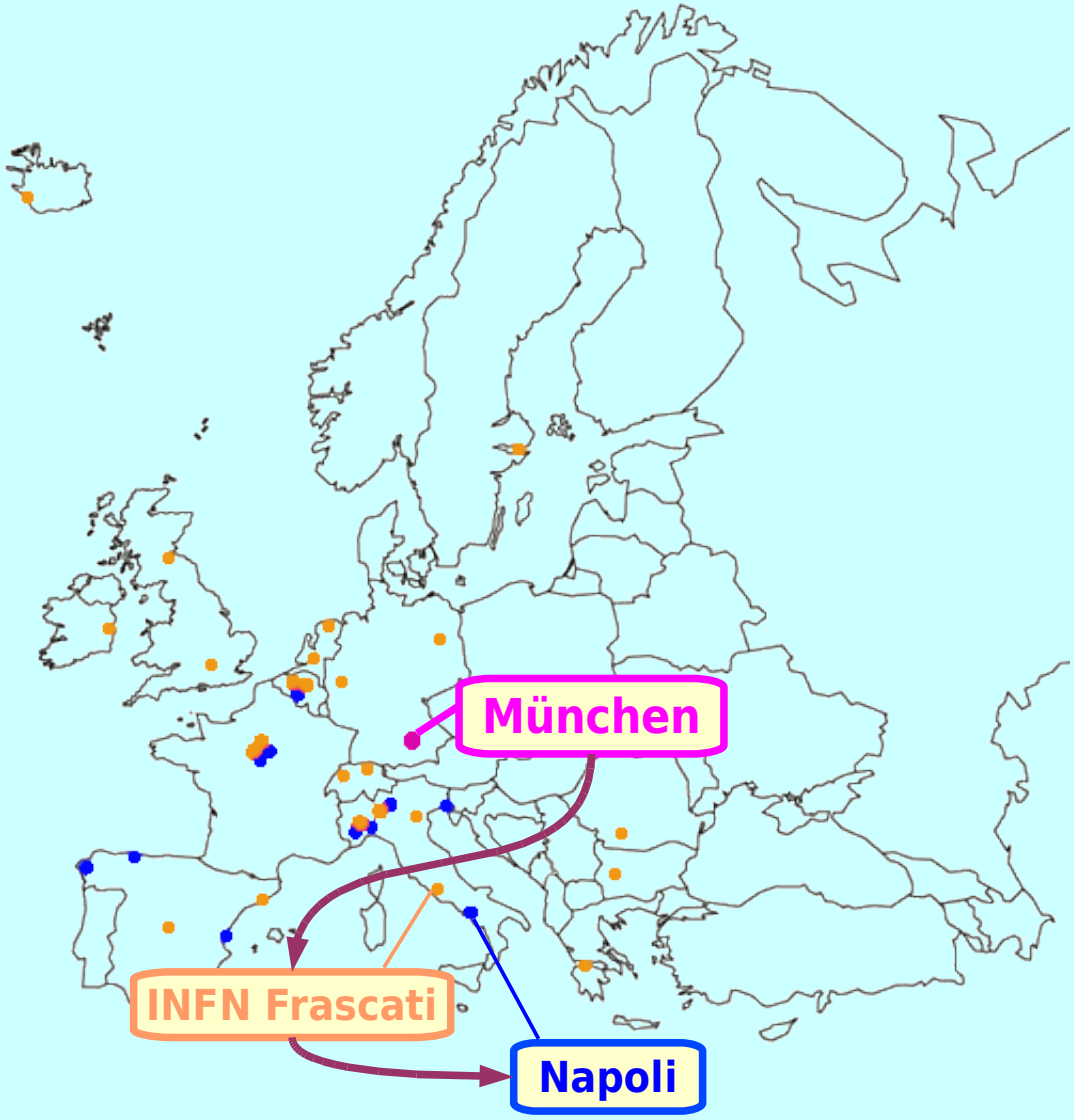
Castel dell'Ovo

Napoli - Place of the

2nd RTN Workshop and Midterm Meeting

2006

Napoli in the Network



Palaeontology Museum

People

San Gregorio Armeno

Raffaele Marotta	*INFN, Sezione di Napoli*
Franco Pezzella *	
Luigi Cappiello	
Gaetano Fiore	
Antonella Liccardo	*Università di Napoli*
Giuseppe Maiella	*Federico II*
Wolfgang Mück	
Renato Musto	
Francesco Nicodemi	
Roberto Pettorino	
Valentino Montaquila	*Ph.D. Student*

Recent Research Areas

Flux Compactifications
String Instantons

AdS/CFT

Black Hole Microstates

Noncommutative Geometry

Flux Compactifications

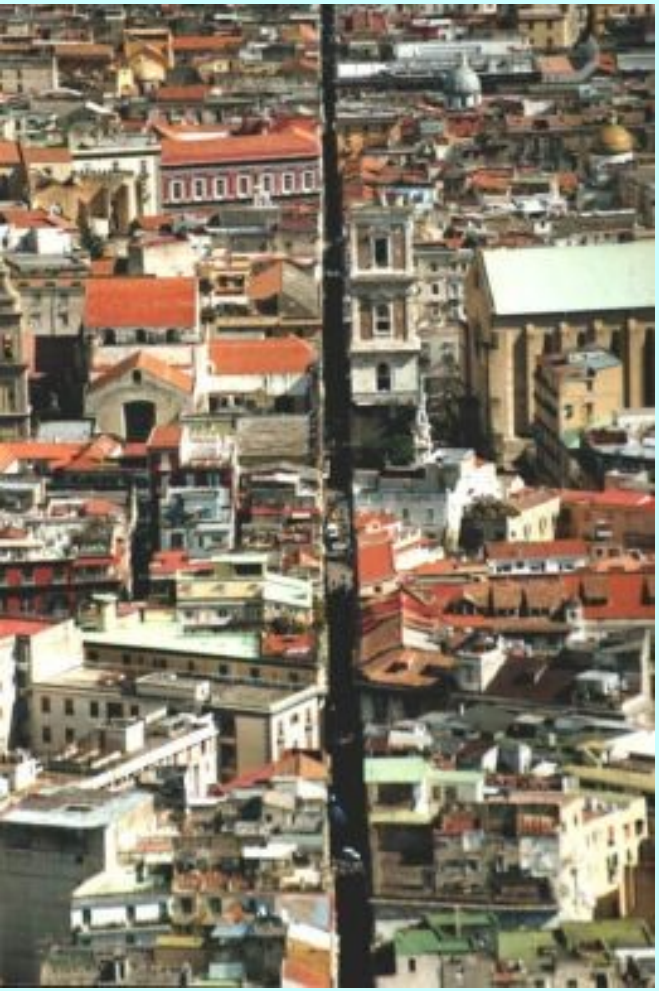
- stringy description of wrapped magnetized branes
- boundary state formalism
- gauge bundle versus Narain duality

A. Liccardo, R. Marotta, F. Pezzella
P. Di Vecchia (NORDITA)
I. Pesando (Torino)

- *Magnetized branes, gauge bundles and Narain branes ...*
  in preparation
- *Boundary state for magnetized D9 branes and one-loop calculation*
  hep-th/0601067

Spaghetti drying

String Instantons



Spaccanapoli

- gauge theory instanton effects from Euclidean magnetized branes
- derive holomorphicity properties of non-perturbative effective actions
- reconstruct Kahler metric of matter fields

R. Marotta
M. Billò, M. Frau, I. Pesando (Torino)
A. Lerda (Alessandria)
P. Di Vecchia (NORDITA)

- *Instanton effects in N=1 brane models and the Kahler metric of twisted matter*
  arXiv:0709.0245
- *Instantons in N=2 magnetized D-brane worlds*
  arXiv:0708.3806

Black Holes in AdS/CFT (1)

- Lin-Lunin-Maldacena (LLM) solutions provide nice testing ground for new ideas on black hole entropy (e.g. coarse graining, stretched horizon)
- thermodynamic entropy of microstate ensembles equals von-Neumann entropy in the coarse-grained picture (cf. Balasubramanian et al., arXiv:0705.4431)
- stretched horizon size estimated from ensemble fluctuations

L. D'Errico, W. Mück, R. Pettorino

- *Stretched horizon and entropy of superstars*
  JHEP 0705:063 (2007), hep-th/0703223

Crater of Mt. Vesuvius

Black Holes in AdS/CFT (2)

- description of BTZ black holes by CFT_2
- *SL(2,Z)* duality of CFT_2 leads to unexpected dualities between BTZ parameters

Miracle of San Gennaro

G. Maiella, C. Stornaiolo

- *A CFT description of the BTZ black hole: topology versus geometry (or thermodynamics versus statistical mechanics)*
  hep-th/0611194

AdS/CFT

- rewrite QFT amplitudes in terms of string theory variables (Gopakumar)
- explicit realisation for some 4-point functions

F. Pezzella
M. Bonini (Parma)
C. Núñez (IAFE Buenos Aires)

work in progress

Maschio Angioino

non-AdS/non-CFT

- glue- and gluinoball mass spectra for QFT duals of Klebanov-Strassler and Maldacena-Núñez backgrounds
- consistent truncation to 5-d “fake SUGRA” of type-IIB SUGRA
- analytical and numerical study of fluctuations in 5-d “fake SUGRA”

Piazza Plebiscito

W. Mück

M. Berg (Potsdam)

M. Haack (München)

- *Glueballs vs. gluinoballs: Fluctuation spectra in non-AdS/non-CFT*
  Nucl. Phys. B (in press), hep-th/0612224
- *Bulk dynamics in confining gauge theories*
  *Nucl. Phys. B **736**, 82 (2006), hep-th/0507285*

AdS/QCD

- Holographic models of QCD versus traditional effective Lagrangian methods

L. Cappiello, G. D'Ambrosio

- *Effects of condensates in holographic QCD effective Lagrangians*
  in preparation

Noncommmutative Geometry

- fundamental aspects of field theories on non-commutative spaces with generalised symmetries
- QFTs on Moyal-Weyl spaces with generalised symmetries are equivalent to QFTs on (commutative) Minkowski space-time

Monastery of Santa Chiara

G. Fiore
J. Wess[†]

- *On full twisted Poincaré symmetry and QFT on Moyal-Weyl spaces*
  *Phys. Rev. D **75**, 105022 (2007), hep-th/0701078*
- *Can QFT on Moyal-Weyl spaces look as on commutative ones?*
  arXiv:0705.1120