

State Space Modelling to Increase the Accuracy of Weather Radar Estimation of Mean Area Precipitation

Marco Costa¹ and Teresa Alpuim²

¹ Higher School of Technology and Management of Águeda, University of Aveiro, Apartado 473, 3754-909 Águeda, Portugal

² Department of Statistics and Operations Research, Faculty of Sciences of University of Lisbon, Ed. C6 Campo Grande, 1749-016 Lisbon, Portugal

Abstract: This work compares some state space models for correcting the bias of the weather radar in Cruz do Leão, at Coruche, Portugal. Particular attention was given to the statistical adjustment of models, because precipitation data clearly deviated from the normal distribution. This work is based on 17 storms occurred between September of 1998 and November of 2000, in an area that includes part of the Alenquer river hydrographical basin.

Keywords: Area Rainfall Estimation; State Space Models; Weather Radar Calibration.