



Pre-operational WRF validation in Galicia: a comparison with MM5

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During last six years MeteoGalicia, the regional meteorological agency of Galicia - NW of Spain-, has been operationally using two different NWP models (ARPS and MM5) in high resolution configurations both for daily public forecasts and other end users of numerical products (wind power, ocean wave and current models, fire risk, public advisories, etc). The release of WRF model and its growing community of users including research and operational forecast centres is an excellent framework for improving these numerical forecasts. In this way, before the implementation of WRF as operational model some validations need to be done. This work will be mainly focused on a comparison between MM5 current configuration in MeteoGalicia and the two WRF dynamical cores (ARW and NMM), also including an evaluation of their performance by means of a grid-to-point verification using real surface data from MeteoGalicia's meteorological stations network. Standard statistical indices have been obtained for temperature, wind module and wind direction, while indices based on contingency tables have been calculated for accumulated rainfall. Moreover, some particular cases have been studied in detail. Three different situations during the last year have been chosen for this study: July 2006, November 2006 and 15th January to 15th February 2007 covering the most typical situations in this area including potentially high impact weather events as a heat wave, heavy rainfalls and relatively cold minimum temperatures, respectively. In this study some slight improvements in WRF performance compared with MM5 have been observed. Also, shorter CPU times in WRF make affordable higher resolutions, and then usually better resolved phenom-

ena. By the other hand, to complete this evaluation some extra verification, including grid-to-grid approaches, should be done. Finally, the results of this work will be the basis to study a more convenient new grid configuration and parameterizations of WRF applied to the area under study.