



Improvements on a limited area parameterization ensemble forecasting system. From one to several boundary conditions.

B. Gómez, C. F. Balseiro, E. Penabad, V. Pérez-Muñuzuri

MeteoGalicia. Conselleria de Medio Ambiente e Desenvolvemento Sostible. Xunta de Galicia

Regional ensemble forecasting has proven to be a very useful tool for many different applications like extreme events or wind power prediction. MeteoGalicia, the regional meteorological agency of Galicia - NW of Spain - has recently introduced ensemble forecast techniques in its NWP models. The aim is to provide a high resolution probabilistic forecast at short and medium range. A preliminary EPS configuration has been tested using one single initial and boundary condition - 1ž GFS - and 12 different set of parameterizations configuration of MM5 model on a 30Km resolution 80x100 grid with 23 vertical levels centred in the North West of Spain. A comprehensive verification over one year period was made to choose the best configurations. A set of surface observations from the MeteoGalicia network was used for this purpose. It can be observed most of the spread and skill of this testing ensemble can be explained only with three of the aforementioned sets of configurations. Afterward another different EPS configuration has also been tested. Global GFS ensemble was used for initial and boundary conditions. The 15 members were divided in 3 groups and each of them were used to provide initial and boundary conditions to the three previously chosen sets of MM5 model configurations. An extensive comparison of both configurations was made over a three month period using from MeteoGalicia network and METAR surface observations. Deterministic and probabilistic scores were used studying both the whole period and specific cases like cold front passing and warm rain.