Uncertainties in High Resolution Model Verification:
The case of ETA Model Performance in Argentina
Martina Suaya*, Raul Valdivieso and H. H. Ciappesoni

At the National Weather Service in Argentina (SMN) the ETA model with 30km resolution has become operational since 2004. From 2004 until today the ETA SMN has been the primary model for the forecast office. The importance of the verification was immediate and several issues arose when working on this subject:

- Impact on analysis resolution: higher resolution analysis produced verification fields with much less systematic errors near the surface.
- When compare with another NWP model, in this case the GFS model which at the same time is the parent model of the ETA model, is it possible to outperformed the latter? With the pair analysis-forecast from the same model, the GFS one performed better than the ETA model. But at the same time, using an independent analysis field to compare with the forecasts of both models, opposite results where obtained (on relative sense). The ETA model showed smaller values of Teweles Skill Score (S1) and Root Mean Square Error (RMSE).
- Objective verification of critical variables such as precipitation and extreme temperatures forecasts are done on monthly basis. The ETA model configuration of 2003 and 2004-2007

- Because evaluation of forecasts issued by the National Weather Service is done since the 80’s it was straight forward to use this results to evaluate the ETA model outputs in its testing period (year 2003) and then operational and official from 2004 until today. A jump in precipitation forecast hits of the forecast office (human forecasts) in 2004 was significant.
- The distribution of ETA model extreme temperature errors show the systematic errors in the forecast. This information is used to correct the raw forecasts of the model by removing the bias by an empirical formulation (not shown).

*National Weather Service – Argentina - msuaya@meteofa.mil.ar