



Test of a dynamical downscaling chain for assessing climate at regional scale.

A. Vargiu, E. Peneva, and M. Marrocu
CRS4, Energy and Environment, Pula, Italy (elfa@crs4.it)

During last years reanalysis datasets (ECMWF ERA40 or NCEP Reanalysis Project) have been widely used to investigate climate and detect some signals of global climate changes. Heavy limitations of those datasets are found when investigating the variables with intrinsic small coherence: precipitation, local winds, fogs, etc.

Our aim was to perform a dynamical downscaling of ERA40 dataset using a local model (BOLAM, developed at the ISAC-CNR, Bologna, Italy). We focused our study mainly on precipitation verification. More specifically we verified the downscaling chain with CRU daily precipitation over Europe at 0.25 degrees. A test period, covering about a year, was studied adding up runs of 36 hours forecast. Some common verification indexes for precipitation, (ETS, POD, FAR, HK, etc.) were computed at different thresholds. The verification results have shown the benefits of the downscaling chain particularly for events of deep convective precipitation and precipitation forced by orography.

Comparison of the results obtained using the BOLAM model and a specific regional climate model (REGCM3, developed at the ICTP, Trieste, Italy) will be also discussed.