EMS Annual Meeting Abstracts
Vol. 9, EMS2012-147, 2012
12th EMS / 9th ECAC

Validation over France of the reanalysis produced within EURO4M project

C. Soci, F. Besson, and E. Bazile
Meteo-France, CNRM/GMAP, Toulouse, France (cornel.soci@meteo.fr, + 33 5 61 07 84 53)

An important goal of the EURO4M project is to deliver the most complete gridded climate time series covering the whole Europe. Regional reanalysis have a wide range of applications in research studies conducted to improve understanding and prediction of climate variability and change or in hydrology. Under the framework of the EURO4M, reanalyses of surface and screen level atmospheric variables at high-resolution, corresponding to a grid size of about 5km, are to be performed such as to cover the whole continent.

The methodology utilized to validate the reanalysis data is a key issues to assess its quality. A common approach is to validate the reanalysis data against the independent or withheld observations. However, in regions with a low data density for example, one would like to use all the available observational dataset, and hence withholding observations from the analysis would not be appropriate.

Therefore, in order to validate the analysis data we consider an indirect approach by computing derived variable such as snow depth and river flow. The river flow simulated by forcing a hydrological model can be used for the verification of the variables simulated by a land surface model. In turn, the land surface model is driven by atmospheric variables such as precipitation, short- and longwave radiation, wind speed, air temperature and air humidity which are provided by the reanalyses or a numerical weather prediction system.
Another approach used to validate the reanalysis data is to force a surface module which employs a complex scheme for snow such as to produce a high-resolution snow depth data. The simulated river flow and the snow depth can be further verified either against specific observations or against a reanalysis performed with snow observations.

In this presentation we will address the approaches used to validating the regional reanalysis, and will discuss a few selected results.