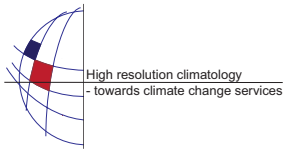
EMS Annual Meeting Abstracts
Vol. 7, EMS2010-610, 2010
10th EMS / 8th ECAC



Mapping of Snow Depth Data for the WMO RA VI Region and its Quality Assessment

P. Bissolli, S. Pietrucha, and U. Maier

Deutscher Wetterdienst, Dep. Climate Monitoring, Offenbach, Germany (peter.bissolli@dwd.de, +49 69 8062 3759)

Maps of monthly mean and maximum snow cover and of the monthly number of snow days based on daily data from synoptical stations are provided for the WMO RA VI Region (Europe and the Middle East) by Deutscher Wetterdienst (DWD) as part of the DWD lead function in a WMO RAVI Pilot Regional Climate Centre on Climate Monitoring (RCC-CM).

After a nearly two-year experience with snow maps, some improvements of the mapping method and the quality control of input data have been made, since it has turned out that many erroneous SYNOP data caused misleading results.

One important point is that an appropriate quality control of input data is essential before the start of mapping. This has been realised by comparing snow depth data with precipitation and temperature to remove data due to inconsistency. Since many data are removed that way and large data gaps are produced, a method has been introduced to fill the gaps of daily snow depth data in a reasonable way.

The mapping itself consists of a non-linear regression of snow parameters with minimum temperature, precipitation and geographical quantities (latitude and elevation), and a spatial interpolation of the residuals, using Radial Basis Functions. These parameters have turned out to be most appropriate, and correlation coefficients increased much compared to a previous version.

For the future, the integration of satellite data from the GlobSnow project of the European Space Agency is foreseen.