EMS Annual Meeting Abstracts
Vol. 8, EMS2011-128, 2011
11th EMS / 10th ECAM

Forecasting the weather
- ensemble techniques
in probabilistic weather prediction

Establishing a new high-resolution precipitation dataset for the Alps

F. A. Isotta, C. Lukasczyk, and C. Frei

Federal Office of Meteorology and Climatology MeteoSwiss, Zurich, Switzerland (francesco.isotta@meteoswiss.ch)

In the framework of EU project EURO4M, MeteoSwiss is developing a km-scale dataset of gridded daily precipitation over the Alps including adjacent foreland areas (2-17.5°E, 43-49°N). The gridded dataset builds on measurements from the high-resolution rain gauge networks, operated by meteorological and hydrological services of seven countries (Austria, Croatia, France, Germany, Italy, Slovenia and Switzerland). The high spatial density of these networks (inter-station distance 10-15 km) together with the daily time scale permits an Alpine-wide reproduction, comparison and monitoring of major precipitation extremes between 1971-2008. The project builds upon previous activities at ETH Zurich, updates existing time series, improves gridding accuracy and resolution and focuses on the climatology of extremes.

We report on activities from the early stage of the project. An overview will be given of the current status of data collection. The elementary characteristics of the observation networks are illustrated and their implications on the design of the spatial interpolation algorithm will be discussed. Moreover, example analyses will be presented of several heavy precipitation events of the past, using a preliminary version of the gridding method. These examples readily illustrate the advantage of trans-national spatial analyses for climate monitoring and practical applications.