EMS Annual Meeting Abstracts,
Vol. 6, EMS2009-65, 2009
9th EMS / 9th ECAM

9th EMS Annual Meeting
9TH EUROPEAN CONFERENCE ON Applications of Meteorology
High resolution meteorology
- applications and services

A high resolution, radar-based tool for nowcasting rainfall in mountainous catchments

L. Clementi (1), U. Germann (2), and L. Panziera (2)

(1) MeteoSwiss, Locarno-Monti, Switzerland (lorenzo.clementi@meteoswiss.ch), (2) MeteoSwiss, Locarno-Monti, Switzerland

MeteoSwiss is currently developing a high spatial and temporal resolution, radar-based application to fulfill the need for immediate information on ongoing heavy rainfall occurring in small and remote catchments where no real-time rain gauge data are available. The tool is able to monitor in real time the precipitation accumulation over several time windows and it is adequate for widespread, orography forced precipitation. By means of a multiple criteria approach empirically adapted to the catchments, it automatically issues alerts valid for a 1 to 3 hours time frame. The goal of this application is to assist hydrologists and decision makers to answer in the very short term demanding questions in situations where it is not possible to wait for more precise information (models), or when better information is not available.
The region crossed by the Emme river – a pre-alpine area on the northern slope of the Swiss Alps – showed to be very exposed to flood hazard during heavy rainfall periods (eg. 2005 and 2007) and therefore it is a good test bed for such application. Events of various magnitudes will be illustrated by means of qualitative and quantitative analysis and a first assessment of the tool based on the experiences gathered during summer 2009 will be presented.