Plinius Conference Abstracts
Vol. 14, Plinius14-29, 2012
14th EGU Plinius Conference on Mediterranean Storms
and MEDEX Final Conference

The CETEMPS Hydro-Meteorological chain during HyMex

B. Tomassetti, E. Pichelli, A. Lombardi, S. Gentile, E. Cerasani, R. Ferretti, and M. Verdecchia
University of L'Aquila, Physics - CETEMPS, L'Aquila, Italy (barbara.tomassetti@aquila.infn.it)

The Cetemps Hydrological model has been offline coupled with WRF and MM5 models in order to estimate the possibility of flood occurrence. CHyM is a distributed grid based hydrological model implementing an explicit parameterization of different physical processes contributing to hydrological cycle, the model can be forced with temperature and precipitation scenarios predicted by MM5 and WRF model. In addition this model implements the calculus of two different alarm indexes providing a map of the segments of hydrological network where floods are more likely to occur. CHyM alarm maps are described and the results for the case study occurred during HyMex campaign are shown. The IOP4 event is used to this purpose. Heavy precipitation occurred in the morning over central Italy mainly along the Eastern Italian coast (Marche and Abruzzo regions), associated with the cut-off low over the Tyrrhenian Sea. The rainfall maxima reached more than 150 mm/24h producing floods over Marche and Abruzzo.
Emphasis is given to the possibility of coupling of WRF and CHYM model providing an effective tool for operational flood alert mapping.