Geophysical Research Abstracts
Vol. 13, EGU2011-10727-1, 2011
EGU General Assembly 2011

Hydrometeorological and hydrological analysis for the Nov 1, 2010 flood event in North-eastern Italy

Francesco Marra (1), Francesco Zanon (1), Daniele Penna (1), Nicola Mantese (1), Davide Zoccatelli (1), Marco Cavalli (2), and Lorenzo Marchi (2)

(1) Department of Land and Agroforest Environment, University of Padova, Legnaro, Italy, (2) CNR IRPI - National Research Council of Italy, Research Institute for Hydrogeological Protection, Padova, Italy

Hydrometeorological analyses of rainfall and flood response are presented for the flood event occurred over the Veneto Region (North-eastern Italy) in November 2010. The event – lasting three days - produced localized storm total rainfall accumulation exceeding 500 mm. Hydrometeorological and hydrologic studies illustrate the important role of orography in controlling the flood response. Analyses of high-resolution radar rainfall fields are presented, with special emphasis on radar rainfall error structure and spatial and temporal variations of flood-producing rainfall. Diagnostic and hydrologic model studies in the Posina, Leogra and Agno basins are carried out to examine the controls of land surface processes and space-time rainfall distribution on extreme flood response. Land surface processes and the contrasting distribution of rainfall in space and time from the storm systems combine to shape the scale-dependent distribution of extreme floods in the study basins.