



Ensemble hydrological forecasting for flood management in the Brenta basin

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In view of flood control by reservoir regulation in the Brenta basin, in the Italian Alps, an accurate flood forecast is needed some days in advance. Within the MAP D-PHASE project an ensemble hydrological forecasting system was setup capable to predict runoff hydrographs at some dams and river gauges. The system proved to provide useful information for water authorities and civil protection. But for some flood events some false-alarm 'outliers' in the ensemble members of the COSMO-LEPS meteorological system, i.e. high flood forecasts predicting runoff peaks and volumes much higher than the observed ones. If water volumes would be released from reservoirs as a flood mitigation measure relevant economic losses would result. A combination of structural and non-structural measures would be needed for an efficient flood management in the Brenta basin.

The paper shows the effects produced in a set of preferred options if existing storage capacity use in association with a flood forecasting system is introduced.