Using satellite retrieved data for the calibration of an hydrological model for flash flood forecast.

F. Delogu (1), S. Gabellani (1), F. Silvestro (1), R. Rudari (1), F. Sini (1,3) and G. Boni (1,2)

(1) CIMA, University of Genoa and University of Basilicata, Savona, Italy, (2) DIST, University of Genoa, Genoa, Italy, (3) Centro Funzionale per la Meteorologia e l'Idrologia Sistema di Protezione Civile e Sicurezza locale, Regione Marche, Ancona

Distributed hydrological modeling allow to incorporate remotely sensed data, such as evaporative fraction and soil moisture conditions, with the purpose of initializing, driving, updating or calibrating models. In this work a parsimonious distributed model devoted to small catchments continuous discharge simulation is presented. The model is able to mimic the different component of the continuity equation when calibrated on reliable hydro-pluviometric data. In order to test the possibility of calibrating the model in an ungauged catchment, hydrometric measurement are replaced by energy fluxes maps retrieved by a flexible and simple model of satellite data assimilation. The simulations envisage the option of obtaining a satisfy model performance when calibrated on remotely sensed measures only.