



Course resolution satellite imagery to support flood inundation modelling in near real time

G. Di Baldassarre, G. Schumann, and P.D. Bates

University of Bristol, School of Geographical Sciences, Bristol, United Kingdom (g.dibaldassarre@bristol.ac.uk, +44 (0)117 9287878)

Remote sensing offers a wide range of support to monitoring, modelling and management of flood events. The availability of timely data is, for obvious reasons, necessary for effective disaster management. From space, satellites carrying Synthetic Aperture Radar (SAR) sensors are particularly useful for monitoring large flood events. Nevertheless, monitoring floods from space in near real time with a high spatial resolution is currently only possible through a costly application of satellite programming or a constellation of multiple satellites due to the strong inverse relationship between spatial resolution and revisit time. However, floods on larger rivers for which a coarser resolution might be sufficient can be recorded in near real time at no extra cost for the user. This could render remote sensing an indispensable tool for flood support. The aim of this study is to assess the effectiveness of coarse resolution SAR image acquired and processed in near real time to support and verify timely modelling of a low magnitude flood event that occurred on the River Po (Northern Italy) on June 2008. In particular, the possibility to re-calibrate flood inundation models in a time shorter than the flood travel time is investigated. This possibility would increase the reliability of model predictions and, consequently, assist flood management authorities to make the necessary prevention activities.