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Estimated Post-Flood Effects Through Sentinel And Landsat Data to Support Civil Protection

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On October 15, 2015, a severe and devastating flood hit the region of Sannio, Southern Italy, and the city of Benevento. Benevento and the hilly area of Sannio, have already experienced similar disasters, but the natural disasters occurred in the past did not help to better cope with current ones. The flood in this almost unknown area of Campania reached its climax with the flooding of the Tammaro and Calore Rivers. The extent of the damage to the region, businesses and people was very heavy. Benevento is the most affected area.
Utilizing a combination of remote-sensing techniques, Geographic Information System (GIS) data, this project employed Sentinel-1/2 and Landsat 8 imagery taken before and during the floods to calculate total inundated area and delineate flood extent. This data was then used to assess pre-existing flood hazard maps of the area. The resulting maps and methodologies from this project were been delivered to the local governments and organizations as they work to better understand this historic event and plan for recovery throughout the region.
The main goal of this study is to map flood inundation using principally open, free and full data acquired by Sentinel and Landsat satellite platforms operated by European Space Agency (ESA) and the National Aeronautics and Space Administration (NASA) respectively.