



## **Operational flood risk monitoring and prediction systems: the experience of the OPERA project of the Italian Space Agency**

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The Opera project "civil protection from floods" is a pilot project of the Italian Space Agency that aims to verify the potential of satellite data in reducing uncertainty on hydro-meteorological forecasting.

To this end, the project has developed, starting from the state of the art, a set of algorithms capable of producing thematic maps compatible with the input of hydro-meteorological models used operationally by the Italian system of civil protection.

In addition features that allow to observe the space-time evolution of flooding events and to quantify the damage have been implemented.

The project, lasting four years, is now in its final phase, in which the products are tested operationally.

Every day some operational hydrometeorological forecasting chains selected from those used in Italy are run in EO configuration (i.e. with satellite data in input) and in standard configuration (i.e. without using satellite data).

In addition, for a number of recent flood events, even outside the Italian territory, the ability to monitor real-time evolution of the phenomena and quantification of the damage has also been tested.

In this paper, we present the main results achieved during the period of operational test.