



## **Can we map floodplains globally?**

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Flood economic damages and fatalities have considerably increased worldwide. Floodplain mapping is a sustainable measure to discourage new human settlements in flood-prone areas and raise the awareness of people living in flood prone areas (Di Baldassarre et al., *Geophysical Research Letters*, 2010). However, flood hazard and risk maps are currently available only for a few river reaches because of lack of consistent hydrological and topographical data. Moreover, these attempts were performed using different methods and often produced spuriously precise deterministic floodplain maps.

This presentation aims at analyzing whether the current growth in availability of globally and freely available remote sensing data may allow the production of probabilistic floodplain maps for the entire globe. The discussion is facilitated by some numerical experiments recently carried out in different study areas: River Po (Italy), River Severn (UK), and Blue Nile (Sudan).

In this approach, globally and freely available data (e.g. SRTM, ENVISAT ASAR) are used to build and calibrate the model, while probabilistic envelope curves are used to estimate the design floods at ungauged sites. Preliminary results indicate that, whilst uncertain, these probabilistic floodplain maps have a great value, especially in developing countries, as a tool to start discouraging new human settlements in flood prone areas and raise the awareness of people living in flood prone areas.