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A case study in coastal flooding analysis

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Floods are among the most frequent and costly natural disasters in terms of human hardship and economic loss. Depending on topography, soil condition, ground cover, human settlements and other factors, flood can produce catastrophic impacts both in terms of damages and modification of the landscape.
The Salerno province experienced numerous flooding events after heavy thunderstorm, that triggered intense landslides (debris-mudflow), inundations, denudation, shore line progradation, etc. Recent study (Porfido et al. 2009) show that in this area more than 100 flooding events occurred since 1500. Among these four events have been estimate in the maximum severity class.
Research into the historical flooding highlights the case of the event of 11 November 1773 as one of the major flooding occurred in Cava de' Tirreni, Campanian region, Southern Italy. About 400 - 450 people died; severe damage to the buildings were registered in a wide area of the Salerno province; several mud flows invested large areas of coastal territory which caused progradation phenomena of the shoreline of several hundreds of meters.
The main objectives of this paper are: the historical reconstruction of the event considering contemporary documents found at Archives and National Libreries; characterization of the rainfall timing using historical descriptions; delimitation of inundated area; distribution of damage levels and identification and classification of flood-induced geological phenomena.