



Flooding events in the Sorrento Peninsula coastal zone, South Italy, since the XVIII century

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The Campania (South Italy) is among the regions of the Italian territory particularly subject to hydrogeologic risk (landslide, flooding) which represents a threat to the natural environment and a persistent menace to urban areas, mostly in terms of human lives and socio-economic costs. This study presents a historical reconstruction of the effects of a series of catastrophic floodings that occurred along the southern flank of the Sorrento Peninsula (Amalfi coast). This is a key territory in Southern Italy for tourism and high quality citrus fruit agriculture, characterised by a picturesque landscape and an abrupt coastal cliff excavated in Mesozoic carbonate rocks that underwent dramatic uplift (in the order of several hundreds of meters) during the Quaternary. The collected historical data document the occurrence in this region of about one hundred flooding events since the XVIII century that consistently correlate with relative abundance peaks of rainfall, expressed in terms of mm/year. In fact up to 55% of the flooding events is concentrated in the autumn-winter period, with a maximum occurrence of 23 % during November. A minor abundance peak in the order of 9% of the documented floodings is also detected during the springtime (March). Relevant (catastrophic) events were reported in 1773, 1899, 1910, 1924 e 1954. In particular this work reconstructs the flooding that occurred between November 9 and 11 in 1773 after a week of intense precipitations. This event caused significant damages in the Salerno region in the catchment area between the Irno and Cetus rivers. The total number of victims was between 400 and 450 and about half of them were living around the village of Cava de' Tirreni where the flooding caused the maximum destructive effects. The large volume of sediments and debris delivered to the sea by this flooding event formed a fan delta at Vietri sul Mare, which caused a progradation of the shoreline of

several tens of meters.

References

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