



Contemporaneity of floods and storms. A case study of Metropolitan Area of Reggio Calabria in Southern Italy.

Caterina Canale (1), Giuseppe Barbaro (1), Olga Petrucci (2), Giandomenico Foti (1), and Pierfabrizio Puntorieri (1)

(1) DICEAM Department, Mediterranea University, Reggio Calabria, Italy (giuseppe.barbaro@unirc.it), (2) Institute for Geo-hydrological Protection (CNR-IRPI), National Research Council, Cosenza, Italy (o.petrucci@irpi.cnr.it)

The environmental balance is being increasingly altered by humankind's direct and indirect actions. Anthropisation and waterproofing are amongst the main causes of the irreversible process of land consumption. The situation is exacerbated by climate changes affecting both the rainfall regime, and wave action on the coasts, causing extreme events such as storms and floods. These represent worrying phenomena if they occur singularly, but devastating when occurring together. Storms and floods frequently occur across Italian territory, but are particularly violent in Calabria, located in the southern part of Italy. Calabria's particular orography, geomorphology and exposure to the winds of the Scirocco in the South and the Mistral in the North influence the response of the territory to precipitation and to wave motion, with consequent floods in urban areas, and inundation in coastal areas. Calabria stands at the confluence of the Tyrrhenian and Ionian Seas and is particularly exposed to such phenomena. Its unique geomorphological formation makes it subject to floods and sea storms that have revealed the fragility of its territory. When such phenomena occur concurrently, the effects can be devastating, both in terms of infrastructure damage and inconvenience to the local population, as flood waves that move downstream interact with wave run-up. We will analyze the history of contemporary floods and storms in the Metropolitan Area of Reggio Calabria, which is located in the south of Calabria and in the middle of the Mediterranean Sea. One case study will be illustrated, relating to the town of Ferruzzano on the Ionian coast. The event (flood and storm) took place from 30 October to 2 November 2015, causing the destruction of the railway and the highway.