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Vulnerability assessment for preliminary flood risk mapping and management in coastal areas

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Planning and management of coastal environment, both terrestrial and marine, is affected by several actions in environment resource conservation and improvement paying specific attention to risk forecasting and preventing. In such context the EU flood Directive 2007/60/EC, which requires Member States the assessment and management of flood risk, and the EU water framework Directive (2000/60/EC) are the key factors in the integrated river basin management to assure an efficient and rational use of resources.
Afterwards, coastal risk assessment and mapping is a propaedeutic phase to plan and manage coastal areas. In this work risk analysis refers to the results obtained by the combined application of coastal flooding and erosion risks in the activities carried out to prepare Regional Coast Management Plan for the Ionian coast of Basilicata Region located in the south of Italy. In order to define the driving forces acting on the shore, high resolution lidar data, bathymetric information and wave climate statistics acquired by meteorological analyses on wind field data referred to different acquisition times are used. The systemic vulnerability estimation is achieved by composing both hazard factors combined in the Criticality Coastal Index depending on of the assessment of Coastal Flood Index and Coastal Erosion Index based on morphologic and socio-economic variables.