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## Storm-induced coastal hazard assessment at regional scale: application to Catalonia (NW Mediterranean)

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**Abstract.** A methodology for coastal hazard assessment at regional scale is presented and applied to the Catalan coast (NW Mediterranean). The method separately evaluates erosion and inundation hazards by using wave time series and beach characteristics (slope and sediment grain size). Obtained hazard time series are fitted to extreme probability distributions for different coastal sectors which are defined in function of local wave climate. This approach allows to compare the spatial variation of hazard intensities for a given probability of occurrence and, thus, to objectively identify the most hazardous areas along the coast in terms of erosion and inundation. Obtained results indicate that the coast north of Barcelona is more hazardous than the southern coast regarding inundation for any given probability. With respect to storm-induced erosion, the central coast of Catalonia is the less hazardous area, although spatial variations in erosion along the coast are smaller than the observed for inundation.

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