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Development of a numerical atlas of the easily flooded zones by marine immersions of the sandy littoral of Languedoc Roussillon (France)

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Abstract :
The Regional Direction of the Infrastructure (France) entrusted to the Technical Studies Center of the Infrastructure (CETE Mediterranee) the study of a numerical atlas of the easily flooded area by marine immersions of the sandy littoral of Languedoc Roussillon. The objective of this paper is to present the methodological results. To do the map making of the easily flooded area by marine immersions (storm), we used several numerical data base. We can list, for example, the "BD Topo Pays" and the aerial photography of the National Geographical Institute (IGN), the geological mapping of the Geological and Mining Researsh Department (BRGM). To complete this data, we have realised a geomorphological interpretation of the littoral with the aerial photography. This naturalist approach can give the geomorphological object (beach, sand dune, ...) of the sandy littoral. Our objective was to determinate the limit about coastal plain (flooded by storm) and the alluvial plain (flooded by overfloowing) and not liable to flooding form. In the first phase of the study, a progressive methodology was used to develop a version of the numerical atlas based on the available geographical data of geomorphological, historical and topographic nature. During the second phase, we have developed this approach on the four french's department (Pyrénées-Orientales, Aude, Hérault and Gard). The result is the map making of the easily flooded area by marine immersions for 230 km of the sandy littoral. This mapping define the geomorphological factor of the littoral. Like this, we can found a qualitative hazard about marine immersions.

Keywords : Storm, Marine immersions, Atlas of the easily flooded zones, Languedoc-Roussillon, France