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New trends in flood hazard mapping in urban area

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Definition of flood risk maps is a task to which modern surface hydrology addresses a substantial research effort. Their impact on the government of the flood prone areas have increased the need for better investigation of the inundation dynamics. This identifies open research problems such as: the definition of the design hydrograph, the choice of the conceptual hydraulic model and methodologies for flood hazard assessment. The aforementioned issues are here addressed by presenting a case study in a urban vulnerable coastal area in Italy. A new approach for the definition of the design hydrographs is investigated. The inundation is simulated with a quasi bidimensional hydraulic model that schematizes streets and aggregation of buildings as a network of channels and storages. The flood hazard is then evaluated, as defined in most recent directives for the river basin planning, on the basis of both hydraulic depth and flow velocity.