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A complete event scenario for the flood of Lodi (Northern Italy) in 2002

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In the last years, the need of a more integrated and standardised interpretation of flood events has been claimed by both the researchers' and the practitioners' communities. Indeed, integrated interpretations of flood events are fundamental to adapting and optimizing flood mitigation strategies on the basis of thorough forensic investigation of each event; on the other hand, standardisation is required for the comparison among different events, supporting both the prioritizing of investments in flood risk mitigation and the evaluation of their effectiveness.
Menoni et al. (Flood damage: a model for consistent, complete and multipurpose scenarios, Nat Hazards Earth Syst Sci, 2016) proposed a model for the development of complete event scenarios, as the bases for both integrated and standardised analyses of flood events. In this study, the model is applied to the flood that hit the city of Lodi (Northern Italy) in 2002. The implementation of the model allows to investigate: (i) the damage occurred to the different exposed sectors (i.e. population, infrastructures, public services, economic activities, private properties, environmental and cultural heritage, and civil protection), (ii) physical as well as functional and systemic damage, (iii) the spatial scales at which the different types of damage occur or manifest, (iv) the temporal evolution of damage and finally (v) damage mechanisms and root causes. All this information is key for supporting and improving risk management in the affected area.