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Risk analysis based on hazards interactions

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Despite an increasing need for open, transparent, and credible multi-hazard risk assessment methods, models, and tools, the availability of comprehensive risk information needed to inform disaster risk reduction is limited, and the level of interaction across hazards is not systematically analysed.
Risk assessment methodologies for different hazards often produce risk metrics that are not comparable. Hazard interactions (consecutive occurrence two or more different events) are generally neglected, resulting in strongly underestimated risk assessment in the most exposed areas.
This study presents cases of interaction between different hazards, showing how subsidence can affect coastal and river flood risk (Jakarta and Bandung, Indonesia) or how flood risk is modified after a seismic event (Italy).
The analysis of well documented real study cases, based on a combination between Earth Observation and in-situ data, would serve as basis the formalisation of a multi-hazard methodology, identifying gaps and research frontiers.
Multi-hazard risk analysis is performed through the RASOR platform (Rapid Analysis and Spatialisation Of Risk). A scenario-driven query system allow users to simulate future scenarios based on existing and assumed conditions, to compare with historical scenarios, and to model multi-hazard risk both before and during an event (www.rasor.eu).