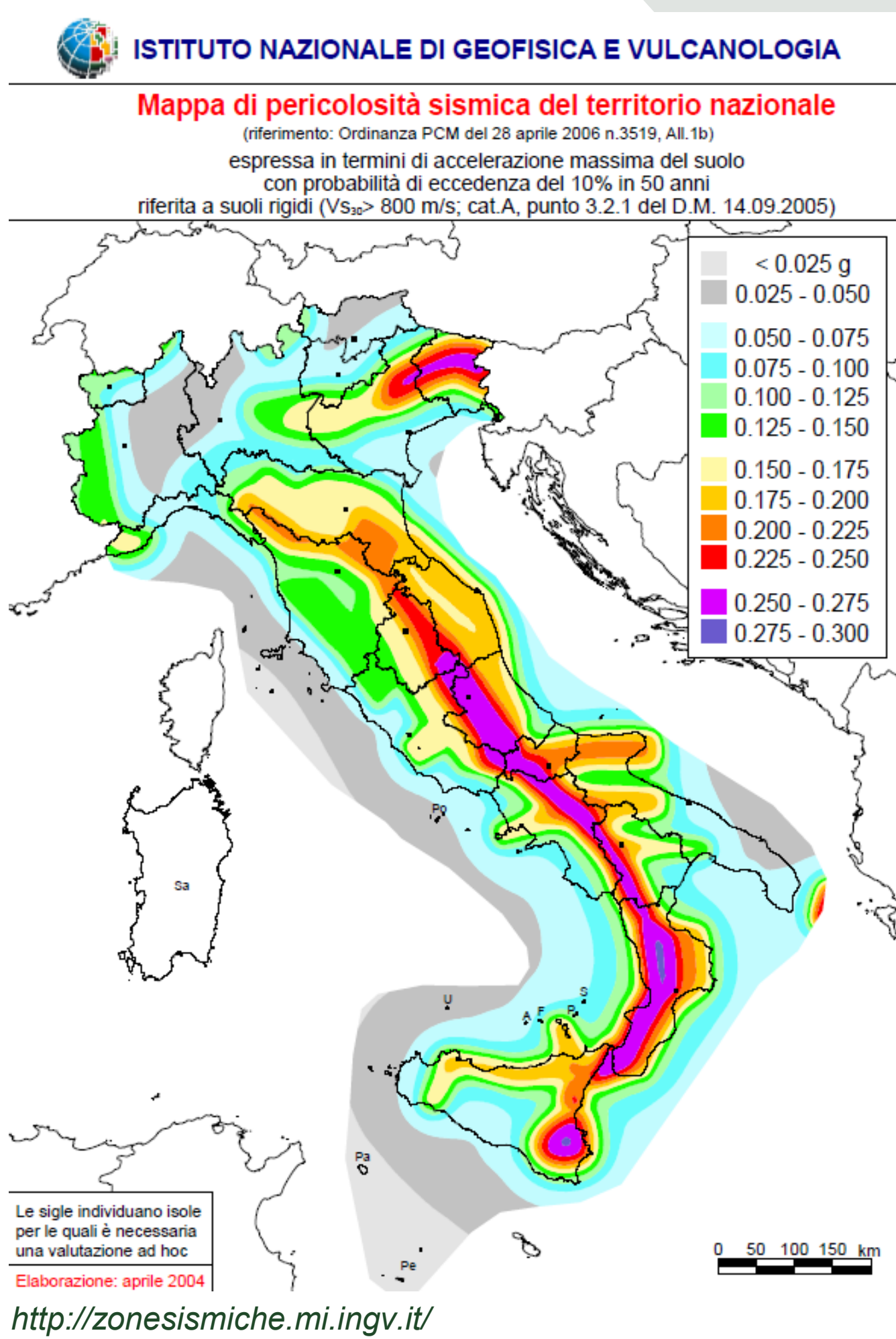


PhD: Pietro Marincioni, UNICAM. Supervisor: Tiziano Volatili, UNICAM.

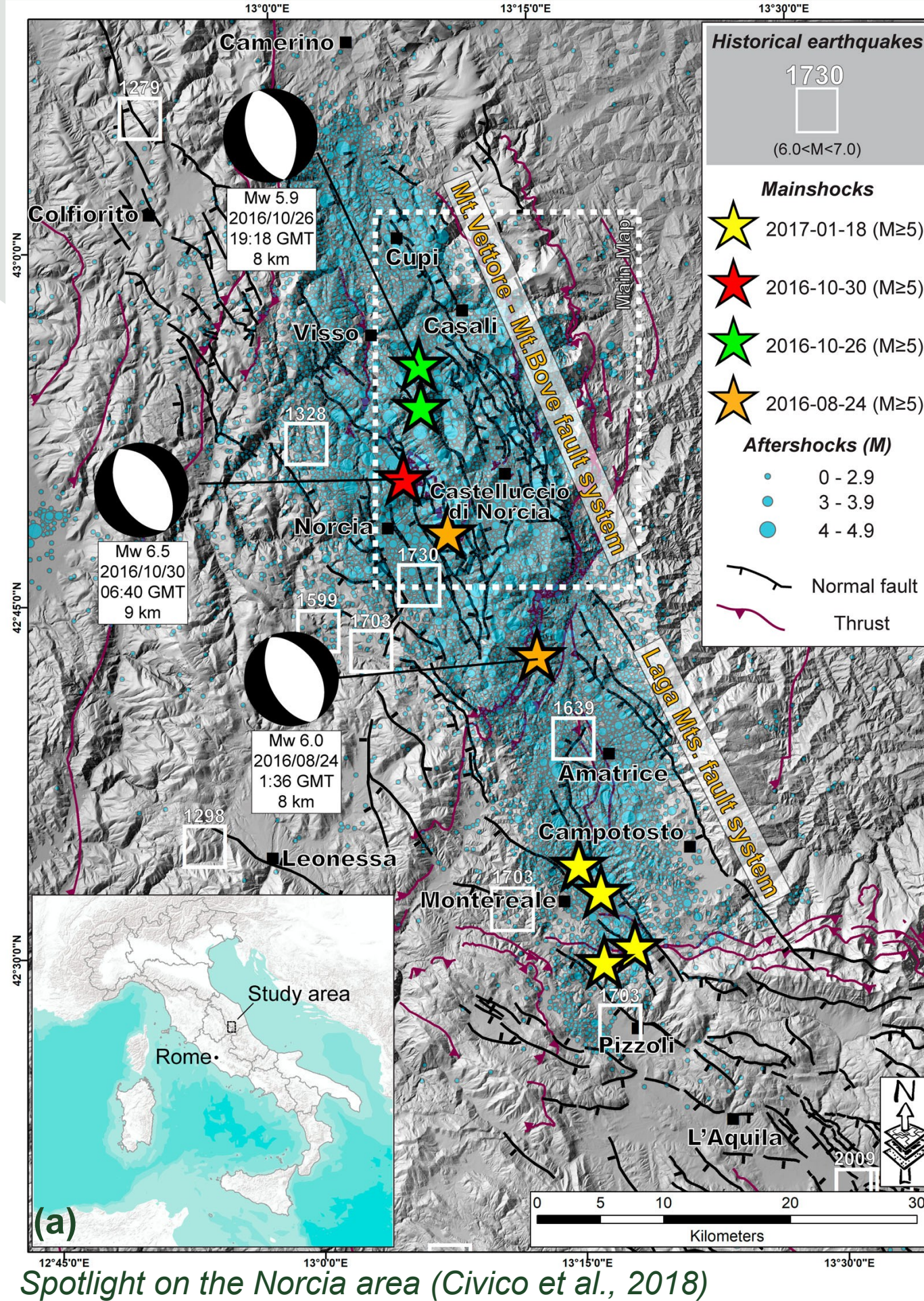
AIM OF THE STUDY

Multi-hazard study and evaluation, focusing on the relationship between earthquakes and secondary effects (such as landslides) at different scales. The final aim of this project is the development of techniques that constitute a base, as all-inclusive as possible of the elements of natural risk forecasting, for urban development and prevention; To produce digital and paper maps that are complete, that highlight con-causality relationships in a clear and readable manner and that streamline the amount of material to be used for possible future local projects.

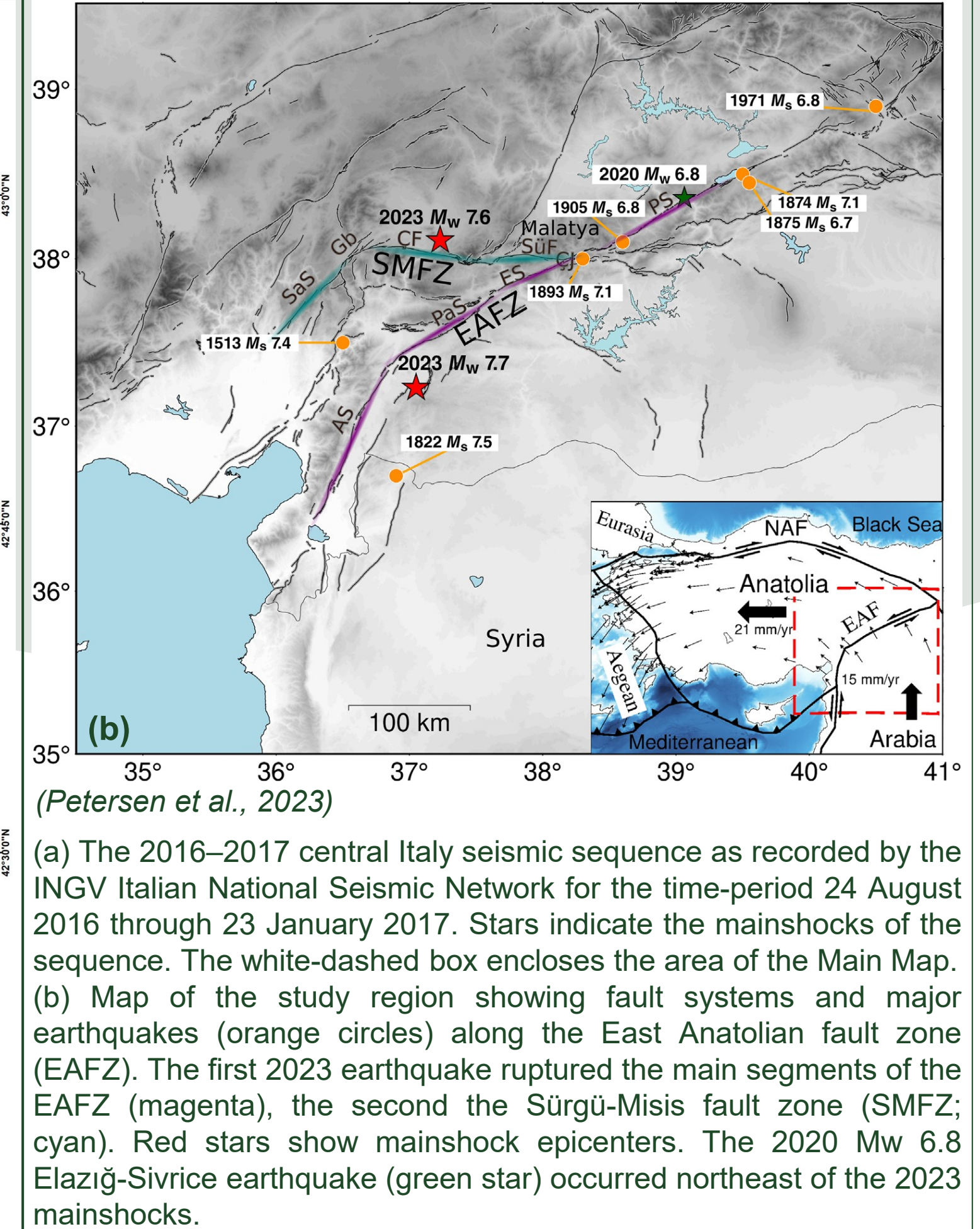


STUDY FRAMEWORKS

- Normal Fault System - CAFS

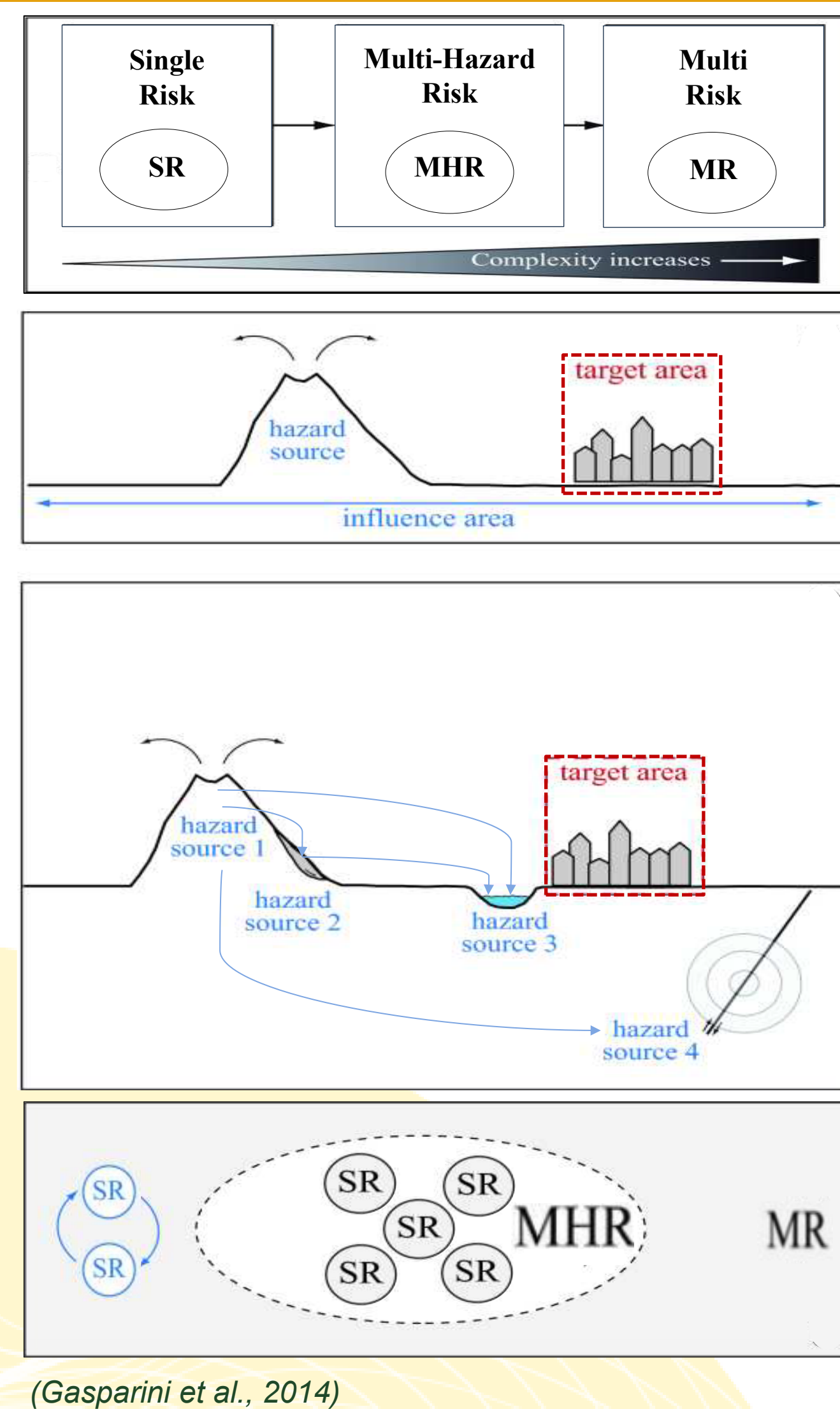


- Transcurrent Fault System - EAFZ



MULTI-HAZARD OVERVIEW

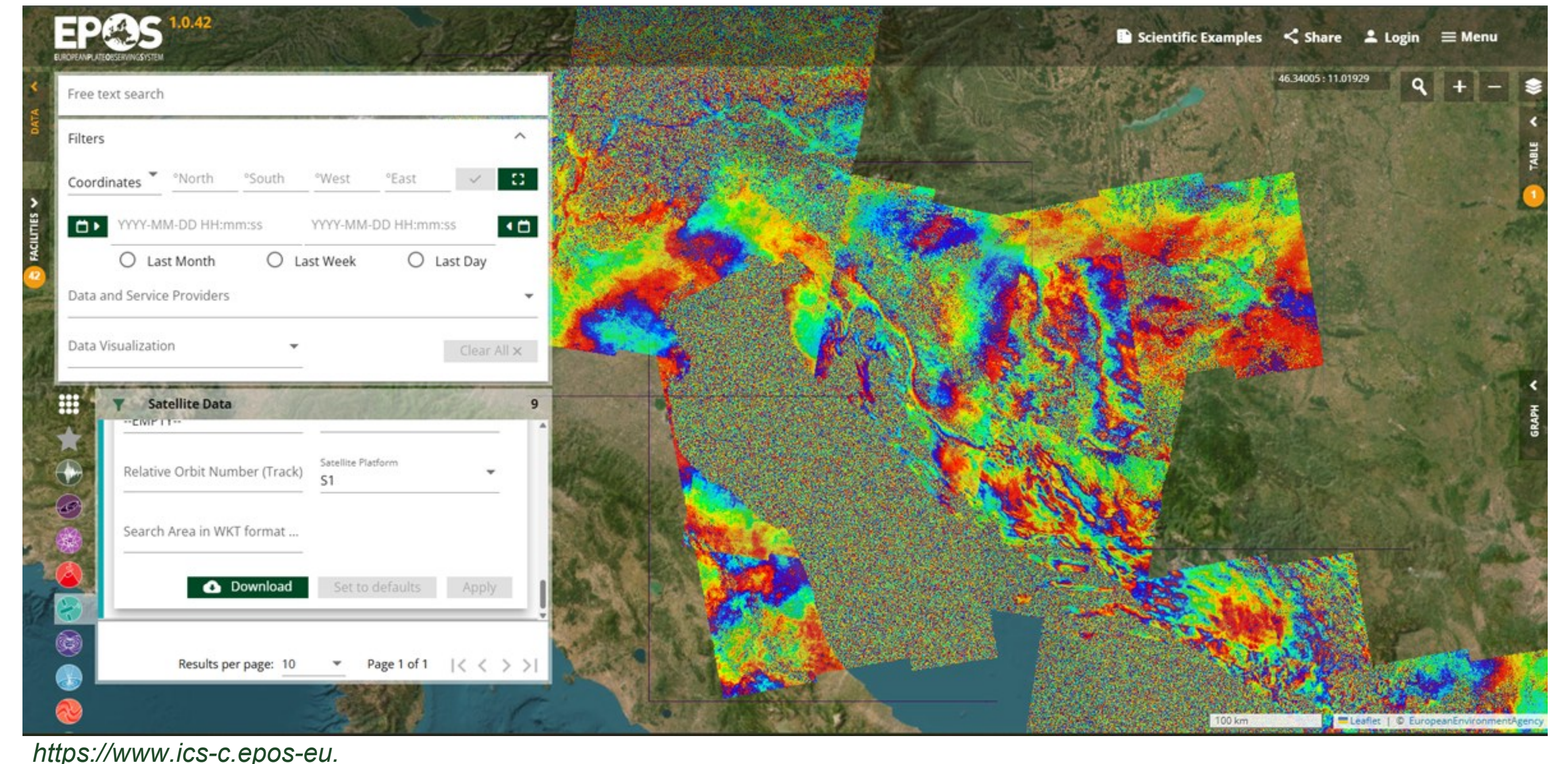
It assesses multiple source hazards that may occur and interact (cascading effect) in a single area. This transition implies a shift from the “hazard-centered” perspective that characterises the single-hazard assessment as a “territorial-centered” one. Cascading hazards is the additional loss caused by secondary events triggered by a primary event. Cascading effects can result from interactions at the hazard level (a primary event modifies the probability of a secondary event) or at the vulnerability level (an event modifies the response of exposed elements to subsequent hazards).



(Gasparini et al., 2014)

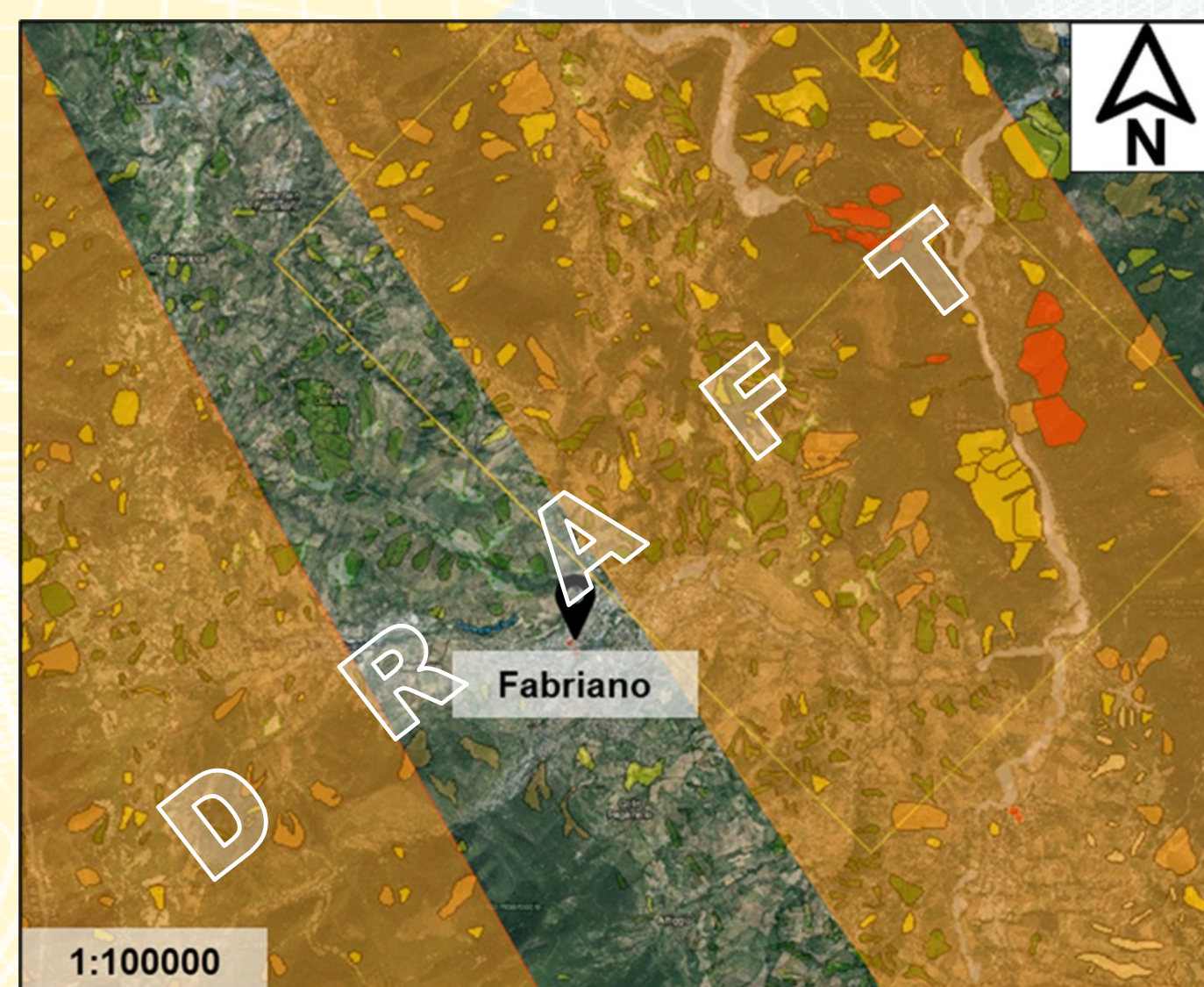
WORK PRINCIPLES

The initial phase of the study involves the collection and analysis of state-of-the-art data from multiple seismological, satellite, and geological databases. Specifically, the collection of InSAR data is to serve as the primary metadata for the preliminary assessment of earthquakes and landslides. This will be managed with GIS software and other applications that utilise the DInSAR technique.



EXPECTED RESULTS AND FURTHER DEVELOPMENT

Following an initial phase of data collection through national and international databases, it is planned to move on to a preliminary modelling phase. The possible mechanisms that may concatenate in a multi-hazard analysis will be reconstructed. Subsequently, the input of field-measured data will facilitate the refinement and correction of potential mechanisms that have been generalised in the study. This will enable the establishment of algorithms or procedures for future implementation.



- <https://diss.ingv.it/mapper/>
- <http://www.pcn.minambiente.it/viewer/>

WHY EPOS?

The EPOS platform, along with its affiliated research centers, has the potential to serve as a valuable resource for this research, given the wide range of data and topics it encompasses. It is recommended that consideration be given to including even maps or metadata relating to various forms of natural hazards.

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