

Research program on earthquake forecasting

Tutor Warner Marzocchi

Earthquakes are a major threat for society, and reliable forecast of the expected ground shaking caused by earthquakes is the primary scientific ingredient for any sound risk mitigation action. The research program under development at the Department of Earth, Environmental, and Resources Sciences at the University of Naples, Federico II, is primarily focused on modelling the space and time evolution of the seismic sequences and the associated ground shaking for different forecasting time windows. Different kinds of modelling are explored, empirical, stochastic, physics-based and based on deep learning. The impact of this kind of modelling is twofold: it may provide innovative tools to decision makers for risk reduction purposes, and it allows scientists to test what they really know about the physical process which generate earthquakes.

The program is partially funded by the European H2020 project RISE (start date Sept. 1, 2019).

Proposal for a PhD position

The Department of Earth, Environmental, and Resources Sciences at the University of Naples, Federico II, invites applications for one PhD position in Earth Sciences. The potential research is related to the improvement of short-term seismic hazard models, through a better mathematical description of the earthquake occurrence process, and/or to the modeling of the ground shaking, in particular in proximity of the earthquake source. The candidate is expected to have a good skill in mathematics, software programming, and possibly a good knowledge of natural hazard analysis.