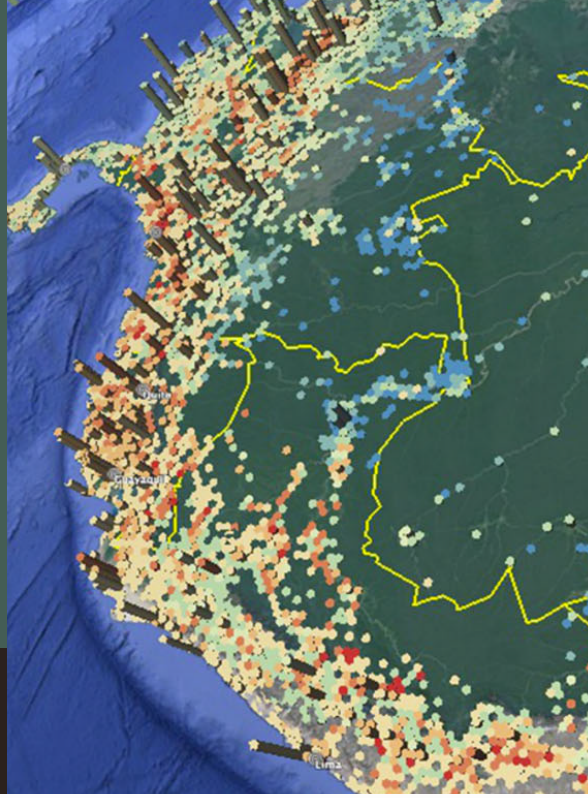
GEM GLOBAL EARTHQUAKE MODEL OQ OPENQUAKE

WE'RE HIRING!

an exciting PhD position at the GEM Foundation under the daTa and pRocessess in sEismic hAzarD (TREAD) Project is waiting for you!

If you're interested in the challenges of earthquake forecasting in complex tectonic settings using integrated observations and physics:

send your application to
proposal-support@innovationacta.eu by April 15th, 2023.



Assessment of the impact of advanced seismic hazard modelling approaches in earthquake risk

Objectives

In this project, the impact of advanced hazard modelling approaches will be investigated for earthquake scenarios and probabilistic seismic risk. For the earthquake scenarios, historical and hypothetical events will be modelled. We will explore metrics such as the number of collapsed structures, fatalities and economic losses. This part of the project will be performed in close collaboration with public partners of GEM, which have experience with the integration of risk results in disaster risk management. Through a secondment at Ud'A, different time-dependent and fault-based seismic hazard models will be used to assess earthquake losses and select seismic scenarios. On the probabilistic seismic risk counterpart, this doctoral candidate will explore critical risk metrics for the (re)insurance industry such as average annualized losses and probable maximum losses. These metrics will be computed using OpenQuake, thus allowing the scientific community to replicate the results. Different PSHA models will be considered, based on the different modelling techniques. This part of the doctoral candidate project will be performed in collaboration with Willis Limited (with a secondment in UK), who has extensive experience in the development of insurance products. These activities will allow an understanding of how different hazard modelling techniques affect the risk results, and therefore how risk assessment should be designed, potentially suggesting a review of the existing building codes.

Expected Results

1. A suite of case studies and openly accessible tools for assessing the impact of different hazard modelling techniques on earthquake risk. These tools will be incorporated into the existing OpenQuake framework;
2. A set of recommendations to perform earthquake scenarios and probabilistic seismic risk analyses using advanced hazard modelling approaches.

Main Supervisor

Vitor Silva (GEM)

Co-Supervisor

Bruno Pace (Ud'A)

Contacts

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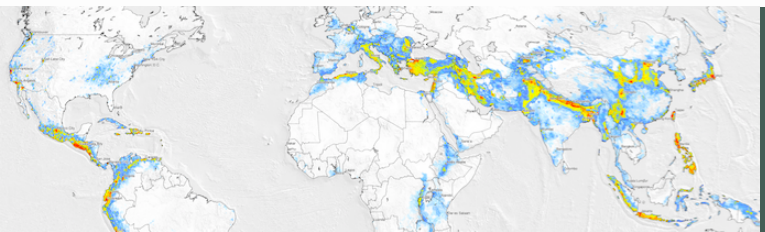
Location & Duration

GEM Foundation (Italy) for a duration of three years)

Additional advantageous skills

programming, numerical modelling.



For additional information about benefits, eligibility criteria and application process, visit:
https://euraxess.ec.europa.eu/jobs/59623