

Opening for a Position in Scientific Code Development with a focus on Probabilistic Seismic Hazard Modelling

The Global Earthquake Model (GEM) is a global collaborative effort that brings together state-of-the-art science and national, regional and international organisations. GEM promotes the creation of open tools, models and datasets for the calculation of seismic hazard and risk.

The GEM Hazard Team assembles and maintains global and regional earthquake databases, and develops and provides the capability to compute and analyse seismic hazard. Currently, the GEM Hazard Team actively develops the OpenQuake Engine (the GEM seismic hazard calculation engine) and several tools and applications for PSHA input model creation and testing, such as the OpenQuake Hazard Modeller's Toolkit or the OpenQuake Model Building Toolkit. The team also collaborates with groups of scientists in different parts of the world involved in activities promoted by GEM.

To expand our modelling capabilities, we seek a modeller/researcher with a strong quantitative background and a distinct interest in seismic hazard analysis. The position, open for an initial duration of two years with the possibility of becoming a permanent position, can be filled either at post-doctoral or full staff level depending on the candidate experience.

Responsibilities and duties

The successful candidate will join the Hazard Team at the GEM Secretariat headquarters, in Pavia, Italy. The Hazard Team operates within the broader GEM science & technology group (S&T), a team of some 20 scientists and engineers comprised of the Hazard, Risk and IT teams. Collectively, the S&T group develops methods, models and tools for seismic hazard and risk analysis and conducts risk assessments in collaboration with its partners worldwide.

Primary duties for this position will be:

- The development of open-source tools and software for probabilistic seismic hazard and risk assessment, in collaboration with the IT team
- To support the creation of national, regional and global PSHA hazard models, in close collaboration with scientists working in different parts of the world
- Active research into new theoretical concepts and computational techniques for the development and application of probabilistic seismic hazard.
- Training scientists and students in both the use of the software as well as the scientific aspects of seismic hazard analysis

English is the working language at GEM. Knowledge of a second language is desirable but not required. Frequent travel and participation to meetings in many different parts of the world are also expected.

What GEM offers

- Work in a multicultural environment with diverse expertise comprising seismic hazard analysis and seismic risk, earthquake geology, vulnerability analysis, coding for scientific and engineering applications;
- Participation in a variety of seismic hazard-related projects including but not limited to national and regional seismic hazard analyses, site-specific studies, and risk-tailored hazard studies;
- Prospect to develop international experience through collaborations with GEM's public and private participating organisations and projects;
- A great career opportunity including the possibility to obtain a permanent position in the GEM seismic hazard team;
- Flexible working hours and personal laptop.

The ideal candidate has:

- Strong knowledge of computational programming for scientific applications. Our software (OpenQuake) is developed in Python, but candidates with experience in other programming languages will also be considered
- Experience in the calculation of PSHA and familiarity with the creation of PSHA models is desirable.
- Experience in use of GEM tools for creating seismic hazard models and for computing seismic hazard. Proven experience in developing similar tools will also be considered an advantage
- Proven ability to work in a multidisciplinary team
- Good oral and written communication skills
- Strong multi-tasking and organisational skills
- Ability to work collaboratively, openness to discussion and willingness to collaborate with the other members of the team
- A PhD in one of the following disciplines (or related) is desirable: engineering seismology, seismic hazard assessment, earthquake engineering, scientific computing or computational seismology

We look forward to hearing from you. Please apply at this link <https://bit.ly/3OhY7NA> with a cover letter explaining why you would be a good fit for the position, a CV, your list of references (minimum 2), and timeline of availability. The selection procedure will start immediately and continue until we fill the position. For any additional information please send an email to marco.pagani@globalquakemodel.org with the following label in the title [GEM Hazard Application].