Postdoctoral research position 2025-2026:

Probabilistic Seismic Hazard Assessment in the French West Indies

This post doc position is funded within the ATLAS project, aimed at delivering a seismic hazard model for the French West Indies by the end of 2026. The post-doc position consists of the building of a source model for the French West Indies and the estimation of the corresponding probabilistic seismic hazard (WP4 of ATLAS). The post-doc will be working at ISTerre, with strong interactions with a team of researchers from different French institutions participating in the ATLAS project (IPGP Paris, Nantes University, IRSN, BRGM Orléans, Antilles University), working on the earthquake catalog (WP1), the seismotectonic zoning (WP2) and the ground-motion prediction (WP3). The post-doc will also benefit from scientific interactions with students, post-docs, researchers and engineers within the team "Seismic cycle and transient deformations" at ISTerre.

Innovative methods will be selected to build earthquake forecasts using all available information on the generation of earthquakes in the region under study: historical seismicity, instrumental seismicity, understanding of the geodynamics in the region, geodetic data, active tectonic data. Different earthquake forecasts will be developed to model future earthquake occurrences in the crust, as well as in the subduction interface and within the slab. These models may include seismotectonic homogeneous source zones, potentially active crustal faults, dipping interface fault planes and 3D smoothed seismicity dipping slab (see Foix et al. *https://doi.org/10.5194/nhess-2024-53*). Earthquake frequencies will be determined based on the earthquake catalogs available, the deformation measured within volumes or along faults, making assumptions on the size of future earthquakes. Alternative models will be built to take into account uncertainties and to reflect the knowledge available at the time the study is performed. Earthquake forecasts and hazard forecasts will be tested against available observations. Thanks to interactions with the ATLAS team, decisions will be made on the exact models to populate the source model logic tree. Combining the source and ground motion logic trees, hazard levels will be assessed for spectral periods and return periods of interest.

ATLAS project is financed by the French ministry of ecological transition and risk prevention, and gather institutions that are part of Epos-France national research infrastructure.

Profile : the applicant should hold a PhD in developing earthquake forecasts, or assessing seismic hazard, or in a field related to PSHA, possibly with a previous postdoctoral experience. The candidate is expected to be proficient in programming, fluent in English, and to enjoy team work.

Conditions : position of **2 years**, starting early 2025, wage will depend on the candidate's experience

Application : please send your CV, motivation letter and reference letters to Céline Beauval (DR IRD, ISTerre, celine.beauval@univ-grenoble-alpes.fr)

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