UNIVERSITÉ
DE GENÈVE
FACULTÉ DES SCIENCES
SECTION DES SCIENCES DE LA TERRE
ET DE L'ENVIRONNEMENT
DÉPARTEMENT DES SCIENCES DE LA TERRE

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Professeure

TWO PhD OPPORTUNITIES IN VOLCANIC RISK ANALYSIS AT THE UNIVERSITY OF GENEVA

Funding from the Swiss National Science Foundation is **available for four years for two PhD students to begin in the spring 2020** for a project targeting **regional volcanic risk assessment** of the Andes Central and Southern Volcanic Zone (CVZ and SVZ) in Chile and Argentina. The two PhD candidates will work separately but collaboratively on two sub-projects involving probabilistic hazard assessment and vulnerability assessment, which will be combined to develop the risk assessment methodology.

The first sub-project aims at a **probabilistic multi-hazard assessment** of selected areas of the CVZ and SVZ. The PhD candidate will identify the volcanoes with the highest potential impact through the development of a dedicated risk-ranking methodology and will compile the associated hazard assessment combining field work and multi-hazard modelling.

The second and complementary sub-project aims at the **physical vulnerability assessment** of the regions close to the volcanoes selected in the first sub-project. The PhD candidate will combine field characterizations of the typology of buildings and critical infrastructures. This will be integrated with numerical modelling to adapt and extend existing fragility curves and damage scales to the study areas.

Thematic-risk maps will be produced based on the results of both sub-projects and in collaboration with local and national institutions. Both sub-projects will be based at the University of Geneva, will be supervised by Prof. Costanza Bonadonna and will involve the active collaboration with the Earth Observatory of Singapore; the University of South Florida, USA; the Politecnico di Milano, Italy; the East Tennessee State University, USA; and the University of Naples "Federico II", Italy. The project will also engage multiple national institutions in Chile and Argentina, including: SEGEMAR (Servicio Geológico Minero Argentino); SERNAGEOMIN (Servicio Nacional de Geología y Minería – Chile); the Buenos Aires Volcanic Ash Advisory Center; and INTA (Instituto Nacional de Tecnología Agropecuaria – Argentina).

Applicants must hold a diploma/master degree, or an equivalent level of education, in Geology, Physics, Geophysics, Engineering or Computer Sciences (with interests in natural hazards, vulnerability and risk assessments). A background in numerical methods, programming, statistics, and geospatial analyses (GIS) is advantageous for both projects. The students will be integrated in the dynamic **research group of Physical Volcanology and Geological Risk of the University of Geneva** and only highly motivated candidates will be considered for these positions.

Application deadline is January 10, 2020. Interested applicants are required to email a CV, academic transcripts (both undergraduate and graduate), the names and full contact details of 2 or 3 referees, and a motivation letter including the description of experience relevant to the project (maximum 1 page). Unofficial copies of transcripts are acceptable at this stage. **Applicants should also include a statement addressing their preference for either the hazard modelling or physical vulnerability modelling sub-project.** Correspondence should be emailed to: Costanza Bonadonna: Costanza.Bonadonna@unige.ch. Information about the Department of Earth Sciences of the University of Geneva can be found at: https://www.unige.ch/sciences/terre/en/earth-sciences-department/

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