

The Seismology and Gravimetry Section of the Royal Observatory of Belgium and the Unit of Physical Geography and Quaternary of the University of Liège recruit

A postdoctoral researcher in earthquake geology and tectonic geomorphology

Background

In the frame of the FED-tWIN programme of the Belgian Science Policy Office *BELSPO* aiming at promoting research cooperation between Federal Research Institutes and Universities in Belgium, the Seismology and Gravimetry Department (SGD) of the Royal Observatory of Belgium (ROB) and the Unit of Physical Geography and Quaternary (UGPQ) of the University of Liège (ULiege) are recruiting a postdoctoral researcher for the research profile “Prf-078 FAULTCOLLAB – Earthquake geology and tectonic geomorphology of active faults in intraplate context”.

The research project he/she will have to lead requires two lines of expertise, in which the SGD and UGPQ research groups have built a strong tradition. Earthquake geology and paleoseismology, a research topic developed over the past two decades at ROB, involves identifying active faults and folds, analyzing coseismic deformation of sediments in the shallow subsurface, and determining the size and timing of past large earthquakes. Tectonic geomorphology, a strong research topic at UGPQ, investigates and maps the expression of active tectonic deformation in the landscape in order to quantify the amount and rate of deformation. Taking advantage of the know-how of both research groups, the FED-tWIN researcher will ensure the continued development of active tectonic studies in Belgium, with the objective of expanding our knowledge of active faults and the link between surface deformation and past large earthquakes in intraplate Europe.

Function

The long-term scientific objective of the research project is to advance – within the specific context of the intraplate region of Northwest Europe, characterized by low seismic activity (but episodic strong earthquakes) and low rates of deformation – our understanding of:

- active faults, their behavior (seismic and aseismic components) and rate of deformation;
- the recording of past large earthquakes in the landscape and in the sedimentary record;
- the history (size, timing) of large earthquakes on individual faults or fault segments.

The candidate will familiarize with previous results obtained in this domain by ROB and UGPQ and conduct new research, in particular in the Roer Valley Rift System (RVRS) in the border region between Belgium, The Netherlands and Germany.

The FED-tWIN researcher’s activity will be dedicated to expanding the paleoseismic record on the southwestern border faults of the RVRS, building on the results obtained in the first three years of the project. This will include:

- Performing geomorphic and geophysical investigations at selected potential paleoseismic sites that are most likely to contain a record of paleo-earthquakes;
- Getting permit from land-owners and administration once paleoseismic trenching sites have been identified;
- Opening a new paleoseismic trench at a site where there is an identified lack of paleoseismic data and land-owner permits have been acquired;
- Maintaining and updating the fault trace database and fault offset database with newly collected observations, published data and existing geophysical data.

All planned tasks will be performed in close interaction with the SGD and UGPQ teams, to both of which the researcher will be affiliated and between which he/she will distribute his/her work time according to a bilateral agreement associated with the research profile. In particular, the researcher will be involved in teaching at Bachelor/Master levels at the Geography Department of ULiège in topics related to its expertise (Quaternary Geology, tectonic geomorphology, seismotectonics).

In parallel, we expect the FED-tWIN researcher will establish collaborations with international teams involved in paleoseismic and tectonic studies in the Euregio (Belgium, The Netherlands, Germany).

What we offer

One open-ended contract in each institution, as *SW2 Workleader* at ROB and as *postdoctoral researcher* at ULiège. The positions are fully funded for a period of 2 years, and 50% funded for the next 5 years. We expect the candidate and the SGD/UGPQ teams to submit and obtain research grants to top up the remaining 50%.

Competences

The candidate will hold a Ph.D. degree in Earth Sciences obtained after December 1st, 2010 and ideally will have expertise in active tectonics, tectonic geomorphology or earthquake geology. A Ph.D. in a different field might be acceptable if the candidate can demonstrate equivalent experience in one or more of those fields. Additionally, the candidate will have good general knowledge of Quaternary geology and skills in one or more of the following fields: near-surface/exploration geophysics, remote sensing, spatial analysis. Experience in, or a good understanding of, dating techniques is an advantage.

Experience in teaching at bachelor and master levels will also be valuable. Teaching at the bachelor level at UGPQ is principally in French, but could also be done in English.

Fieldwork experience is a decisive selection criterion. Speaking knowledge of the German and/or Dutch language is considered a strong additional asset for obtaining permissions from land-owners and local administrations. Experience in writing, submitting and eventually obtaining research grants is a plus.

Practical information

How to apply:

The candidate needs to send:

- **A complete CV containing publications and other achievements (see DORA: <https://sfdora.org/read/>) demonstrating past activity in the desired fields;**
- **a motivation letter;**
- **at least one recommendation letter and the names of two other reference persons who could be contacted.**

Applications have to be sent to Dr. K. Vanneste (kris.vanneste@oma.be) with a copy to hr-as@oma.be before March 28, 2024, 12pm.

Please note:

- **Incomplete submissions will be discarded.**
- **If your Master's degree was awarded outside Belgium, the Netherlands or the Grand Duchy of Luxembourg, you will need a certificate proving the equivalence of your degree (see https://www.belgium.be/en/education/equivalence_of_diplomas) before you can be offered a contract.**

Time window for signature of the employment contracts (one part time at ROB, one part time at ULiege): before August 1st, 2024.

Workplaces: **at ROB:** Seismology and Gravimetry Department, Royal Observatory of Belgium – Ringlaan/Avenue Circulaire, 3, B-1180 Brussels, Belgium

At ULiege: Unit of Physical Geography and Quaternary, University of Liège – Clos Mercator, 3, Sart Tilman, B-4000 Liege, Belgium

Contact persons: ROB: Dr. Kris Vanneste (kris.vanneste@oma.be, +32-2-3730280)

UGPQ: Prof. Aurélia Hubert-Ferrari (Aurelia.Ferrari@uliege.be, +32-4-3669395)

Website ROB: <http://seismologie.oma.be/en>

Website UGPQ: <http://www.geomorpho.uliege.be/index.html>