

SLATE – Submarine landslides and Their impact on European continental margins

The European Training Network SLATE funded by the European Commission in the frame of the Marie-Skłodowska-Curie program offers an

Early Stage Researcher position (duration of 36 month)

in the area of direct geophysical monitoring and time-lapse seafloor mapping in the frame of the project

Novel geophysical methods for monitoring hazards at fjord-head deltas, and implications for understanding slope failure in fjord-delta settings? (ESR5)

The Early Stage Researcher will be located and employed at the University of Durham, which is a picturesque World heritage Site in the UK. The candidate will be enrolled and become a member of the graduate program at the University of Durham (UK) as the purpose of the ESR project is research and training leading to the successful completion of a PhD degree.

Project Description

Submarine landslides and associated longer runout sediment flows (called turbidity currents) are the volumetrically most important process for moving sediment across our planet. Both the original landslide and associated turbidity current pose a major hazard to offshore infrastructure, including pipelines and seafloor telecommunication cables that carry > 95% of global data traffic. There are remarkably few direct field measurements from submarine landslides and turbidity currents in action (their velocity has been measured directly at < 10 sites), which is a stark contrast to most other major sediment transport processes (e.g. rivers for which there are hundreds of thousands of direct measurements). This project will use novel sensor technology and methods to produce some of the first (and the most detailed) direct measurements from submarine landslide and turbidity currents. Monitoring will be combined with innovative time lapse mapping of the sea floor to directly image how landslides and associated flows work. Fieldwork will be completed in a series of fjords in British Columbia, Canada; where slides and flows are highly active on fjord-head deltas. This builds on successful previous monitoring and mapping at these sites showing that ~100 slides and flows occur each summer. Fieldwork will be part of a larger team that is monitoring offshore geohazards at a series of global test sites. It will thus be combined with other direct monitoring studies in the Mediterranean, California and elsewhere. The project will involve analysis of various types of geophysical data from sensors on moorings suspended above active flows (e.g. acoustic Doppler current profilers). This will be combined with novel geophysical techniques (e.g. Chirp sub-bottom profilers or multibeam sonars) that image into the seabed and subsurface, and time-lapse mapping with swath multibeam echo sounders. These different types of geophysical data will then be combined to understand how landslides and turbidity currents are triggered, and their frequency, character and behaviour. This project will therefore provide the ESR with a broad training of geophysical techniques for understanding offshore hazards that is well suited to a wide range of careers.

We are searching for a talented and ambitious early career researcher who will be part of a multidisciplinary and international research team. As well as being part of SLATE, they will also join a major international initiative to monitor slides and flows at sites worldwide. Very good written and oral English language skills are required, and they can be developed whilst based at Durham University in the UK. The applicant will also visit other partners from the

SLATE consortium (e.g. in Norway, France) for extended secondments of 1-3 months. The researcher will participate in joint network-wide training activities, and SLATE workshops.

Specific requirements:

- Completed MSc or Diploma degree in Earth Sciences, Oceanography, Geophysics, Engineering, Physics, Geology, Physical Geography, Geoinformatics, Geotechnics or related fields.
- Good quantitative skills and ability to analyse quantitative field data are essential.
- Skills in GIS mapping packages (e.g. Arc), and data manipulation in Matlab are advantageous.

The selected candidate will be employed full-time as an Early Stage Researcher for a maximum of 36 months according to Marie Skłodowska Curie ITN regulations (For more information, please see: <http://ec.europa.eu/research/mariecurieactions/>).

There are no restrictions on nationality. However, to be eligible for employment according to EU mobility rules, ESR5 candidates must not have resided in the UK for more than 12 months in the 3 years immediately prior to recruitment. In addition, the mobility role of the EU pinpoints that the Early Stage Researcher shall at the time of recruitment by the host organisation, be in the first four years (full-time equivalent research experience) of their research careers and have not been awarded a doctoral degree.

Applications should be submitted electronically under the reference number **SLATE-ESR5** as a single pdf document (max. 2 MB) to Prof Dr Katrin Huhn (khuhn@marum.de). Documents should include a letter of motivation, a CV, the applicant's research and technical background as they relate to the position, as well as two reference letters.

As the positions should be filled as the nearest possible date, the deadline for the application is **15th May 2017** or until the positions are filled.

After the successful passing of the written applications, shortlisted candidates will be invited to an interview which will take place at the MARUM, Universitaet Bremen, Germany. Please make sure you are available **from the middle June to the first week of July 2017**.

The EU commission aims at increasing the number of women in science and therefore explicitly encourages applications from female candidates. In the case of equal personal aptitudes and qualification, priority will be given to disabled persons. In addition to the scientific education, the research training group supports families.

Further enquiries can be addressed to

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