**Postdoctoral research position**

The RING team (http://www.ring-team.org/home) is seeking for a postdoctoral researcher to work on **seismic upscaling and downscaling of fractured media**. This work will be carried out in close collaboration with the Geosciences department of MINES ParisTech. The position is available for one year, starting from March 1st, 2019, with a possible extension to a second year.

**Research project**

Fractures and faults are a major feature of crustal rocks when considering thermo-hydro-mechanical-chemical processes within the subsurface. Because they are small (at least in one direction), they are extremely challenging to characterize using standard geophysical methods. From the seismic imaging point of view, travel-time and full-waveform tomography can just provide an effective, long-wavelength equivalent view of fractured rock masses.

The present advertised position aims at developing a method to downscale tomographic images of fractured media. The successful candidate is asked i) to investigate the sensitivity of seismic waves to discrete fracture network (DFN) parameters using the non-periodic homogenization method (e.g. Capdeville et al, 2010; Cupillard & Capdeville, 2018) and ii) to set-up a Bayesian inverse approach to dehomogenize tomographic images (e.g. Bodin et al, 2014) and get information on DFN parameters.

**Requirements**

The candidates must have a PhD degree in seismology, geomodelling, mechanics or applied mathematics. Experience in numerical methods, HPC simulations, and seismic data processing and inversion is preferable. The candidates are also expected to have good communicational (both oral and written) and interpersonal skills for collaborative work.

**Application**

To apply for the position, please send to Prof. Paul Cupillard (paul.cupillard@univ-lorraine.fr), Prof. Alexandrine Gesret (alexandrine.gesret@mines-paristech.fr) and Prof. Mark Noble (mark.noble@mines-paristech.fr)

* a cover letter stating your background and research interests
* a full CV including publication list
* the contact information of two references.

Questions and requests for further information about the position can be e-mailed to the three contacts above.