

Call for applications

2-year postdoctoral fellowship starting January 2018

THERMOBAROMETRY AND CRYSTAL CHEMISTRY EVOLUTION OF LOW-GRADE METAMORPHICS IN CENTRAL PYRENEES

The postdoctoral fellowship will take place at *Institut des Sciences de la Terre de Paris* (ISTeP, UMR7193, Sorbonne Universités - Univ. Paris 06). Funding (salary & research) are granted by the OROGEN program (TOTAL – BRGM – INSU-CNRS) for two years.

Further information and application:

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Candidate profile and key selection criteria:

We are looking for a highly motivated postdoctoral researcher to conduct a petrological study of low-grade metamorphic re-equilibration combining field work, thermodynamic modelling and analytical methods for *in-situ*, micro-scale geochemistry and crystallography.

The successful candidate will have a solid background in petrology and physical chemistry. Experience with analytical techniques involved in the present project (mostly TEM, EPMA) and with synchrotron radiation applications will be favoured. Speaking French is not mandatory. Selection process committed to equality and valuing diversity.

Aim of the study

This study aims at quantifying the low-grade metamorphic evolution of units within the Axial Zone of the Pyrenees to shed light on i) the Alpine-age collisional history in central Pyrenees and ii) mechanisms of softening in mylonites during fluid-rock interactions, with implications for our understanding of the rheological evolution of collisional wedges. The thermo-structural history of the Axial Zone of the Pyrenees is being constrained in an associated PhD thesis, however the extent of Alpine-age collisional metamorphism remains debated due to difficulties in deciphering between inherited, pre-Alpine metamorphism and Alpine-style, low-grade collisional metamorphism likely in the range 250-350°C. Shear zones and mylonites consistent with early phases of the structural evolution of the Pyrenean collisional wedge show extensive fluid-rock interactions and mineral assemblages of interest for thermobarometry. The nature and size of the minerals require detailed analysis of the texture and composition of the assemblage, below micron scale.

The post-doctoral fellow will take part in field work in the Axial Zone, and carry out a petrological study using TEM on FIB prepared ultra-thin sections, in addition to classical analyses (optical microscope, SEM, EPMA). Thermodynamic modelling of the mineralogical evolution will be compared to radiometric dating, intermediate- and low-temperature thermochronology results obtained in the course of an associated PhD thesis.

Framework

The post-doctoral fellow will integrate a large group of >25 PhD students and post-doctoral fellows. Plenary meetings and workshops are organized twice a year by the OROGEN PIs (thematic: pre-, syn-, post-collisional history of the Pyrenees and evolution of the Iberian plate).

Application and deadlines:

Applications are open. Candidates must hold a PhD degree. Candidate selection is expected before November first, 2017. The fellowship is expected to begin in January 2018. Candidates may apply directly to the researchers by sending (via e-mail) :

- a detailed curriculum vitae
- a cover letter detailing their research interests
- a letter of recommendation, from a former academic supervisor.