



JOB DESCRIPTION - PhD

GENERAL INFORMATION

Contract duration: 36 mois

Location: Paris and Nancy

The doctoral candidate will work in the Research Units METIS, AASPE and IPGP in Paris, and Research Units LIEC and SILVA in Nancy.

Worktime percentage: Full time

Qualification required: Master 2 or equivalent

Starting date : November 1st 2020

Deadline for application (CV + application letter + M1/M2 scores and ranking + M2 dissertation+ letters of recommendation): **September 15th, 2020**

Interviews: mid-September/mid-October 2020

SCIENTIFIC CONTEXT

This PhD project aims to define the geochemical and isotope signatures that can be used to track the provenance of wood used in construction (present or archaeological), and the sensitivity of these signatures to carbonization (fire). The work is part of a larger project focused on the carbonized wood frame of the Notre-Dame de Paris cathedral, and relies on an interdisciplinary collaboration between dendro-archaeologists, dendro-anthracologists, biogeochemists, soil scientists, archeometers, and historians.

PROJECT AIMS AND JOB PROFILE

The aim of the PhD project will be to constrain the provenance of carbonized wood from the Notre-Dame de Paris cathedral using the wood elemental composition and the radiogenic isotope ratios of neodymium (Nd) and strontium (Sr). The planned work is to:

- Constrain the effect of carbonization on the chemical and isotope composition of wood;
- Determine the "reference" geochemical signature of modern forests growing on sites of potential origin for the construction wood,
- Measure the elemental and isotope signature of the Notre-Dame carbonized wood, and through comparison with the reference signatures, bring constraints on wood supply areas for the frame throughout the various construction phases of the monument;
- Discuss wood resource management, wood transport and trade networks between the 11th and 13th c. by combining textual, historical, dendrochronological, chemical and isotopic approaches (in collaboration with researchers in the various fields)

The candidate should be trained in Earth Sciences, with a strong taste for biogeochemistry and lab work. Knowledge and/or interest for archaeology, dendrology, or soil science would be highly appreciated.

Job requirements and characteristics:

Interdisciplinarity: work between different laboratories.

Project in relation with the progress of the restoration work of the cathedral.

Work in clean labs with strong acids.

Contact:

T.T. NGUYEN TU (UMR METIS, Sorbonne Université/CNRS) : thanh-thuy.nguyen_tu@sorbonne-universite.fr

A. DUFRAISSE (UMR AASPE, MNHN/CNRS) : alexa.dufraisse@mnhn.fr

A. POSZWA (UMR LIEC, Univ. Lorraine/CNRS) : anne.poszwa@univ-lorraine.fr