UCLouvain is recruiting
a post-doctoral fellowship on forest evapotranspiration and water balance
(1 year full time (15th September 2019 – 15th September 2020)

Context of the post-doctoral internship

In the frame of climate change, together with temperature rise, spring and summer droughts and heat waves are supposed to become more frequent, especially as extreme climatic events. Given the strong potential impacts of these hazards on forest health, it is therefore important to evaluate trees' vulnerability in this context. The objective of this post-doc is to use long time series (1996-2019) to analyze the evapotranspiration fluxes of a mixed forest in Belgium and its response to spring/summer temperature and drought (both climatic and edaphic), with both available data and modelling.

Specific objectives of the post-doctoral internship

The Vielsalm site (Belgium; ICOS RI; http://www.icos-belgium.be/ESVielsalm.html) is a mixed forest site equipped since 1996 for fluxes (CO_2, H_20), meteorological and soil moisture measurements, amongst others. CO_2 flux data have been already widely analyzed, but this is not the case yet for evapotranspiration fluxes. We look for motivated and creative candidates to:

- Validate and analyze H_20 vapor fluxes measurements since 1996, with regards to climate and soil moisture, for beech and Douglas-fir;
- Generate appropriate climate and soil drought indices, by the use of both data and modelling;
- Partition ETR fluxes on the basis of site specific data and/or modelling;
- Generate and test hypotheses on this forest's vulnerability to climate change ;
- Couple ETR fluxes with CO_2 fluxes (WUE calculation), depending on the progress of the work;
- Write a scientific paper.

Expected Experience

- Doctoral degree in forest functionnal ecology or equivalent;
- Strong experience with fluxes and micrometeorological data, soils moisture measurements and data treatment with long time series;
- In-depth knowledge of forest eco-hydrology in the continuum soil-plant-atmosphere;
- Ability to work both independently and in an integrated team environment;
- Excellent quantitative analytical skills (incl. large data sets), preferably in R;
- Excellent oral and written communication skills in English;

Work environment

The candidate will be based at UCLouvain (Belgium), in the research group 'Forest Sciences' (Earth and Life Institute, Environmental Sciences; Prof. Vincke). This project will be held in close collaboration with the Biosystems Dynamics and Exchanges (BIODYNE) research axis of University of Liège (Prof. Heinesch), so he or she will have frequent contacts with BIODYNE. The daily work environment is in French, so French is beneficial but not required.

Applications

The file will include a curriculum vitae, a letter of motivation and a letter of reference.
Applications must be sent by e-mail by **15 August 2019** at the latest to:
Caroline VINCKE; Email: caroline.vincke@uclouvain.be; tel: +32 10 47 37 29
The starting date is 15 September 2019.