Hydro-ecological couplings and models in the context of global changes

4-year chair (tenure track) followed by a full professor position at the ENS Rennes -Environmental Sciences Department-

Application deadline: May 15th on Galaxie

The auditions of the pre-selected candidates will take place at ENS Rennes the 30th of June

Start date: 1st of October, 2023

Research

In response to the acceleration of environmental changes, this CPJ contributes, via mechanistic approaches, to the understanding of interactions and feedbacks between the water cycle and ecology, particularly in the perspective of climate change. The person recruited will work on the predictive modeling of couplings and processes involved in the evolution of natural environments and associated resources. The approaches may concern, for example, the integration and/or assimilation of data from observation systems, the change of scale to regional or even continental scales, or the development of coupled eco-hydrological models exploring the impact of hydrological variability on the dynamics of ecosystems, ecosystem services and biodiversity. The CPJ may also be of interest to ecologists interested by hydrology and, conversely, hydrologists interested by ecology.

The person recruited will have demonstrated the ability to develop quantitative tools and to conduct world-class research funded by high-level competitive projects. He/She will be able to contribute and benefit from the recognized scientific excellence of the University of Rennes in environmental sciences. He/She will be working in the research units of the Observatory of Universe Sciences of Rennes (OSUR), which gathers, through its units, all the skills needed to combine hydrological, ecological, physical, chemical and fundamental agronomic approaches. He/She will work in complementarity with the emerging INRIA project on earth system modeling (ModeliTerre, 2022) aimed at developing the mathematical methods necessary for the simulation and resolution of formalized models in the field of Earth Sciences. He/She will ideally collaborate with the two research units of the University of Rennes associated with OSUR invested on these issues: ECOBIO (Ecosystems, Biodiversity, Evolution) and Geosciences Rennes.

Teaching

The person recruited on the CPJ will participate in strengthening the quantitative skills of students to enable them to address issues of evolution of environmental systems on a solid basis. He/She will support the new CPES (Cycle Pluridisciplinaire d'Études Supérieures Sciences, Environnement, Société) and PhDTrack (Master/Doctorate) programs, two research-oriented programs offered to Bachelor and Master students. The CPES is a Bachelor's degree program offered in a preparatory class (Lycée Chateaubriand) and at the University of Rennes. The ENS Rennes is responsible for the initiation to research. The PhDTrack is a training program carried out in partnership with the Masters of the Rennes site aiming at preparing students for research by combining disciplinary and interdisciplinary approaches. The ENS Rennes is more particularly responsible for the interdisciplinary training. Training

courses rely on quantitative aspects that include mathematical approaches, the mastery of programming and modeling tools, and the understanding of interactions between models and data.

In the short term, the person recruited will manage the department, which currently consists of two Agrégées Préparatrices (a specific status at the ENS comparable to Assistant Progessor), a mathematician recruited from INRIA on another CPJ position, and its temporary administrator. He/She will contribute to the development of the department in relation with the other departments of the ENS Rennes and with the training partners of the site in environmental sciences (University of Rennes, University of Rennes 2, Agro-Rennes Angers Institute). He/She will contribute and benefit from the recently labelled project Excellences "Interdisciplinary Research & Innovative Solutions for Environmental transition" (IRIS-E, 2023-2032) of France 2030 (Program of Investment for the Future).

Research fields

Ecohydrology, Environmental science, Natural resources management, Surface and Subsurface Hydrology, Ecology, Critical Zone

Associated Research Units : OSUR, ECOBIO, Géosciences Rennes

Conditions

Financial support including equipment and personnel costs is associated with the position (200 k€)

Monthly Gross Salary: 3 443 €

Researcher Profiles

Established Researcher (R3), Leading Researcher (R4)

Required Education Level

A Ph.D is required to apply for the position.

Skills/Qualifications

Candidates must have an academic background allowing them to teach graduate and undergraduate courses in water resources. Applicants are expected to have experience in the supervision of PhD students and post-doctoral fellows. Successful candidates must demonstrate potential for developing a strong externally funded research program, be able to apply to major national and European calls to develop international research projects at the highest level (notably via ERC programs) and to develop strategic collaborations with researchers at the institute and university levels. Candidates will be encouraged to collaborate with the researchers of the different institutes of OSUR.

Contact

Administrator of the Environmental Sciences Department (ENS Rennes): Jean-Raynald de Dreuzy

Mail : Jean-Raynald.de-dreuzy@ens-rennes.fr

Director of the Observatory of Universe Sciences of Rennes : Dimitri Lague

Mail : Dimitri.Lague@univ-rennes1.fr