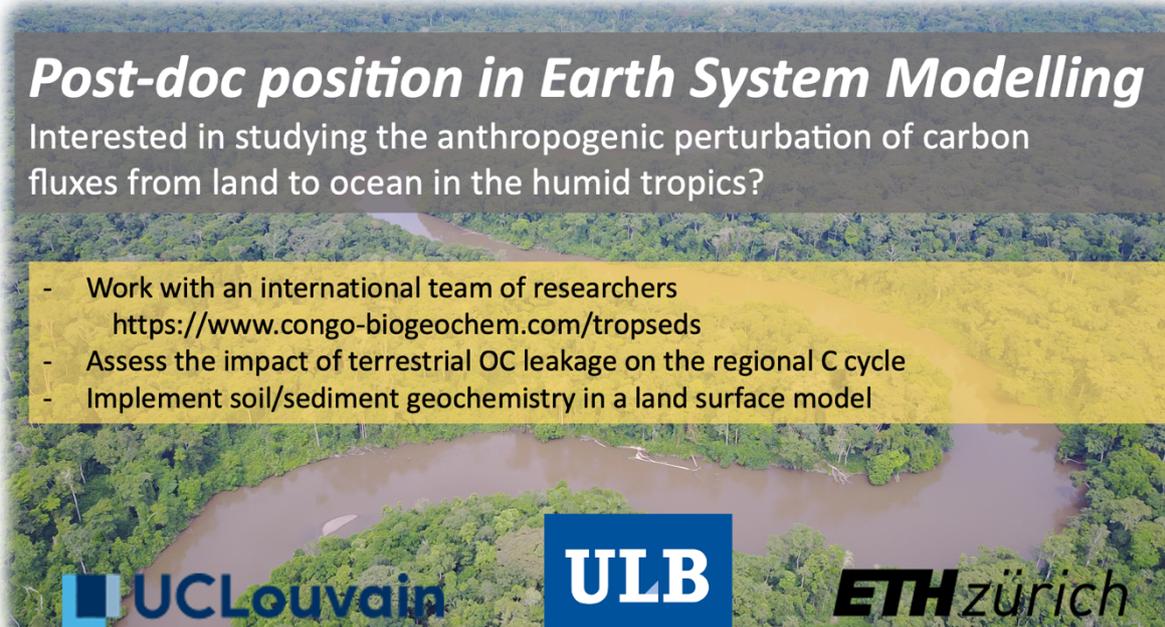


## Postdoctoral position.

Earth System modelling in the [TropSeds](https://www.congo-biogeochem.com/tropseds) project, 100%, ULB & UCLouvain, 2 years



**Post-doc position in Earth System Modelling**

Interested in studying the anthropogenic perturbation of carbon fluxes from land to ocean in the humid tropics?

- Work with an international team of researchers  
<https://www.congo-biogeochem.com/tropseds>
- Assess the impact of terrestrial OC leakage on the regional C cycle
- Implement soil/sediment geochemistry in a land surface model

## Introduction

We seek a postdoctoral researcher for a multidisciplinary project across four groups: (i) The [BGeoSys](#) research group (ULB, Belgium) is dedicated to improve our understanding of the carbon and nutrient cycles and their roles in shaping past and present climates; (ii) The [Earth & Life Institute](#) (TECLIM, UCLouvain, Belgium) is driven to understand how landscapes evolve and how this impacts the humans living on these landscapes; (iii) The [Surface Earth Evolution](#) (SEE) group in the [Department of Earth Sciences](#) at ETHZ is committed to investigate the processes that drive global climate change over human to geologic timescales; (iv) The [Sustainable Agroecosystems](#) (SAE) group in the [Department of Environmental Systems Sciences](#) at ETHZ is dedicated to understand how agricultural and food systems can bring healthy food from fields to tables around the world for generations to come. Combined, our work intersects traditional Earth and environmental science fields to holistically study the drivers and impacts of changing climate and land use. We effectively integrate field-based sample collection and monitoring with lab-based geochemical measurements and numerical models.

## Project background (<https://www.congo-biogeochem.com/tropseds>)

This position is part of the SNSF-funded project “[TropSEds](#) (*Tropical Soil Erosion Dynamics*): *Unraveling the roles of climate and land-use on the erosional transfer of carbon from source to sink through time in the Kasai Basin*”. The project aims to resolve the controls on—and predict future changes in—the movement and fate of tropical soil carbon in the Kasai Basin, DR Congo. Specifically, we will sample sediments in rivers, floodplains, ancient lake bottoms, and soils along the Kasai River. We will assess the amount, age, and source of organic carbon and how this relates to geologic factors such as clay sediment type or environmental factors like land use and climate, both today and over the past ~6,000 years. We will use these measurements to refine computer simulations of Earth’s surface processes to explore the life-

cycle of carbon as it is transported from soils (“source”) to its final destination in sediment deposits (“sink”).

## **Job description**

You will be responsible for the integrated C erosion model aspects, with the specific duties:

- Compile and evaluate observational data, setup model-data interactions
- Implement soil/sediment geochemistry in the ORCHIDEE-C<sub>lateral</sub> land surface model
- Assess the impact of terrestrial OC “leakage” that includes dissolved and particulate fluxes on the regional OC cycle in the humid tropics
- Elucidate how climate and land-use regulate carbon storage versus oxidation within the Kasai Basin over different time scales
- Communicate findings, write scientific papers, and participate in international conferences and workshops

The applicant will be trained by our team in state-of-the-art modelling tools and will proceed in close cooperation with experts in the different fields of TropSEDs. This position is integral to the research team, which includes 4 PhD students and 3 postdoctoral researchers across four groups. You will therefore lead these tasks but will be supported by all involved PIs and postdocs. This multidisciplinary team offers the opportunity to learn, develop, and apply scientific skills beyond traditional earth system modelling!

This postdoc will be primarily based in the BGeoSys and ELI research groups (ULB & [UCLouvain](https://www.uclouvain.be), Belgium). We offer excellent, inclusive working conditions and a competitive salary. Our laboratories are located nearby in Brussels and Louvain-la-Neuve and the working language is English. Start date will ideally be 1 September 2023 (and the latest 1 October 2023). Additional information regarding ULB and UCLouvain can be found at <https://www.ulb.be/en/ulb-homepage> and at <http://www.uclouvain.be>.

## **Your profile**

Required experience, skills, and characteristics:

- PhD in Geosciences (geography, geology, environmental sciences)
- A capacity and interest to work in different fields of earth sciences including biogeochemistry, geomorphology, earth system modelling and hydrology
- Experience in interpreting and exploiting field observations in the context of modelling activities
- Advanced programming and modelling expertise
- Strong coordination and team-building capabilities, with organisational talent and experience in working collaboratively on science and software in a cross-cultural environment
- Proficiency in English
- Ability to work independently with flexibility, critical thinking, and a willingness to learn new skills!

Desirable criteria:

- Proficiency in French
- Familiarity with the humid tropics
- Earth system modelling experience

## Interested?

We look forward to receiving your online application until 15.07.2023 with the documents:

- Curriculum Vitae including educational history, publications, awards, etc.
- Motivation letter (~2 pages) describing your interests, goals, and how they relate to this project
- Names and contact details of three references

Applications should be sent to [tropseds-project@uclouvain.be](mailto:tropseds-project@uclouvain.be), *the above-mentioned documents should be collated into one single pdf file*. Shortlisted applicants will be invited for an interview.

For more information, please contact Prof P Regnier ([pierre.regnier@ulb.be](mailto:pierre.regnier@ulb.be)) or Prof K Van Oost ([kristof.vanoost@uclouvain.be](mailto:kristof.vanoost@uclouvain.be)).

