Deadline: 6 November 2025

APPLY 22-2025

Research Scholar/Modeler – Global Land Carbon Cycle and Land Use Change

As part of a joint initiative of the Exploratory Modeling of human-natural systems (EM) research group of the Advancing Systems Analysis (ASA) program and the Integrated Assessment and Climate Change (IACC) research group of the Energy, Climate, and Environment (ECE) program, the Earth system modeling research theme is looking for a research scholar with expertise in global land carbon cycle modeling and especially land use change. The role will develop further open-source models of the land carbon cycle at various spatial resolutions, link them with representations of other components of the global climate system, and contribute to a better understanding of the global land carbon cycle.

THE ROLE

The successful candidate will contribute to the ongoing EO4BK project funded by the European Space Agency and dedicated to developing a very high resolution bookkeeping model to estimate regional land use change carbon emissions. A prototype of the model has been developed, which now needs to be exploited and fine-tuned.

Additionally, they will also participate in the upcoming CLARiTy project, a five-year project that aims to dramatically reduce uncertainty in land carbon fluxes by integrating high-resolution Earth observation data with advanced modeling techniques. By harmonizing definitions, improving spatial resolution, making modeling approaches converge, and aligning scientific estimates with national greenhouse gas inventories, CLARiTy is expected to deliver more accurate and operational carbon budget assessments to support climate policies and global stocktakes.

The successful applicant will join IIASA scientists to contribute to these efforts and other connected projects, and their modeling work will include:

- using spatially explicit data from global vegetation models and Earth observation to improve and exploit the high-resolution bookkeeping model we have developed,
- improving the land carbon cycle's representation in the OSCAR reduced-complexity Earth system model and its comparability with national inventories.

Both activities aim at an improved vegetation and disturbance representation to better capture the effect of land management and environmental factors on carbon dynamics, and at establishing a unified, data-driven framework that consistently estimates both the land-use emissions and natural land sink components of the global carbon budget.

TASKS AND RESPONSIBILITIES

- Exploit and refine the prototype high-resolution EO4BK bookkeeping model.
- Further develop the land carbon cycle in OSCAR, notably for anthropogenic and natural disturbances, as well as its observation-based constraining approach.
- Contribute to a database that will be used to inform and validate the models.
- Exploit global vegetation models and satellite data to parameterize, constrain and validate both models.
- Setup, run, exploit and share simulations made with both models.
- Write and contribute to projects deliverables as required.

  Write and contribute to scientific articles derived from the above work, and present those at scientific workshops and conferences.

OUR REQUIREMENTS

- PhD (or equivalent) in land carbon cycle/land surface modeling, or a related topic.
- Advanced understanding of current research in land use and land carbon, and more broadly in Earth system science and climate change.
- Experience with the Python coding language is essential.
- Experience with bookkeeping models for land use emissions a significant asset.
- Experience with reduced-complexity climate models in general, with global vegetation models, with satellite products (L3 or L4), and/or with machine learning applied to spatially explicit data preferred.
- Excellent organizational skills, results-oriented mindset, as well as autonomy, proactivity and adaptability.
- Excellent communication skills (both written and verbal) in English, and proven ability to write scientific articles.

- IIASA offers an interdisciplinary and international workplace, and the possibility to interact with researchers of different nationalities, with strong ties to a world-wide network of research institutions engaged in environmental systems research. The successful candidate must be able to work in, and have respect for, an intercultural environment, and IIASA core values.

APPOINTMENT TERMS

The successful candidate should be available to take up the position as soon as possible. We offer an initial employment contract for one year with the possibility of extension thereafter.

Eligible applicants wishing to work part-time hours may be considered.

The place of work is IIASA in Laxenburg, near Vienna Austria (home office options available).

The successful candidate will be appointed as a research scholar (R2) in accordance with the IIASA profiles for research careers.

WE OFFER

- The possibility to contribute to environmental sciences for sustainability and global wellbeing.
- An international atmosphere and pleasant working environment in a historic market town surrounded by green areas.
- An attractive annual salary which is exempt from income tax in Austria (subject to deductions for health insurance and/or social security) and *at least:*
  EUR 53,451.00.

IIASA salaries are:

- Not directly comparable with other employers in Austria, due to the unique legal status and privileges granted to IIASA.
- Subject to the principle of income aggregation (Progressionsvorbehalt in German).

ADDITIONAL BENEFITS

- Educational subsidies for children of school age enrolled in private schools in Austria.
- A generous annual leave entitlement.
- Relocation allowances and paid home leave for employees in scientific and professional categories hired from international locations.
- Assistance for newcomers to Austria with visa, work and residency permit applications.
- Support finding accommodation in Austria.

Further details here.

About IIASA

IIASA is committed to a working environment that promotes equality, diversity, tolerance and inclusion within its workforce. This is reflected in our IIASA core values and the IIASA Gender Equality Plan (GEP). We encourage qualified candidates from all religious, ethnic, and social backgrounds to apply. In the case that candidates are equally qualified, preference will be given to applicants from countries where IIASA has a Member Organization.

Further Information

For further information about this opportunity please contact:

Thomas Gasser, Senior Research Scholar

For general information about working at IIASA, please contact: recruitment@iiasa.ac.at

Applications

To apply for this opportunity, you will need to provide the following documents in English:

- A cover letter outlining your motivation for and fit to the position.
- A detailed Curriculum Vitae.
- The names, addresses (including e-mail), and telephone numbers of two reference givers.
- A link to a repository exhibiting some of your own python code (e.g., data processing, model solving, etc.).

Deadline for receipt of applications: 6 November 2025

APPLY