



JOB OFFER

BIRA-IASB is opening a:

Postdoctoral Position in Atmospheric Chemistry Modelling

Deadline for applications: September 6, 2023
Start date: November 1st 2023
Statute: Contractual

Assignment, division & context

Within BIRA-IASB, the Tropospheric Modelling Team is studying on the emissions of pollutants in the atmosphere, the chemistry and role of chemical compounds involved in the budget of oxidants, and the derivation of emissions of trace gases from satellite data by inverse modelling. More details about our activities at <http://tropo.aeronomie.be>.

Job description

The aim of this position is to perform and analyze high-resolution atmospheric simulations to address research questions in the field of air quality, and to develop tools for the estimation of emissions using satellite observations of air pollutants. We are looking for a scientist holding a recent Doctoral degree in Sciences, for a duration of one year (with extension for an additional 1 year depending on successful performance and sufficient funding), starting from November 1st, 2023.

The proposed work contributes to the scientific effort to improve the knowledge of the atmospheric system relying on models, satellite observations, and inversion tools. Our target is key compounds for both air quality and climate: nitrogen oxides, formaldehyde (proxy for volatile organic compounds), and ammonia. Those species are measured by current satellite instruments (TROPOMI, IASI, CrIS) at high spatial resolution and will be also measured by geostationary missions planned for launch in 2024 (Sentinel-4 and IRS). We will use the WRF-Chem (Weather Research Forecast with Chemistry) high-resolution atmospheric model to simulate air composition from coarse to fine spatial scales. WRF-Chem is an open-source model, widely

More about BIRA-IASB

The Royal Belgian Institute for Space Aeronomy (BIRA-IASB) is a Belgian Federal Scientific Institute. Since its founding in 1964, BIRA-IASB has been conducting research and providing public services in space aeronomy, i.e. the physics and chemistry of Earth's atmosphere and other planets, and outer space. The research performed at BIRA-IASB addresses issues of societal interest such as atmospheric composition changes and their link with climate.

For more information on the institute and its activities, visit our website www.aeronomie.be

used to investigate air quality problems and as an inter-comparison platform between ground-based, airborne and satellite data.

The successful candidate will be in charge of the :

- development of WRF-Chem simulations for selected regions with focus on Europe
- improvement of key features of the model, e.g. emissions and their variability, chemistry
- development of analysis tools for the visualization of the model input/output
- exploitation of aircraft campaign data at fine resolution
- investigation of assimilation techniques for the derivation of emissions constrained by satellite data
- determination of the added value of top-down estimates for air quality analyses and forecasts

The candidate will present the research results through scientific publications, project reports, communications to workshops and international congresses.

Qualifications

Required competences:

- Doctoral degree in Sciences*
- Experience in Atmospheric Sciences and WRF-Chem modeling are strong assets
- Solid programming background (Fortran, Python, Matlab) and experience with data handling and analysis
- Excellent level in oral and written English, knowledge of Dutch and/or French would be an asset
- Strong motivation, initiative, scientific curiosity and team spirit
- Excellent oral and written communication skills, sense for organization, timeliness

(* If the Master or PhD degree was awarded by a body outside the Benelux, the candidate will have to apply for an equivalence of the level of studies preceding the PhD in order to prove that this level corresponds to a generic Belgian Master degree. This should only be done after the candidate has been selected for the job and before the official beginning of the contract. To obtain the equivalence, you can choose to apply at the French (<https://equisup.cfwb.be>) or Dutch speaking (<https://www.naricvlaanderen.be/nl/erkenningen>) community of Belgium.

We offer

- Full-time 1-year contract, with possibility of extension (upon positive evaluation)
- Possibility to acquire a bonus for bilingualism (Dutch/French)
- Salary according to the federal regulations for the scientific career
- Dynamic working environment with many international contacts
- Refund of commuting expenses when using public transportation or bicycle
- Flexible schedule and possibility to work occasionally from home
- Access to special advantages arranged for the employees of the federal scientific institutions (e.g., collective hospital insurance, possibility to follow trainings, free childcare in July/August)
- Working in a green and pleasant environment



Interested?

Send your application (CV and cover letter) to:

hr-ae@aeronomie.be with trissevgeni.stavrakou@aeronomie.be in copy

with the reference "D23_TROPO" before September 6, 2023