



JOB OFFER

BIRA-IASB is opening a:

Scientific position to join the stratospheric modelling group

Deadline for applications: August 15, 2023
Start date: Fall 2023

Assignment, division & context

Within BIRA-IASB, the Stratospheric Modelling group is studying on the composition of the stratosphere and the impact of climate change on the middle atmosphere circulation and the ozone layer, produces analysis of the stratospheric composition using the Belgian Assimilation System for Chemical Observations (BASCOE) and is responsible of the evaluation of the stratospheric composition of the Copernicus Atmospheric Monitoring Service (CAMS). More details about our activities at <http://strato.aeronomie.be>.

Aims of the Position

The first aim of this position is related to CAMS. CAMS, mandated by the European commission since 2015, produces routine analyses and forecasts of the atmospheric composition to monitor air quality and the ozone layer. This is done by constraining an atmospheric numerical model to reproduce observations measured by satellite instruments. CAMS also produce a reanalysis of the past atmospheric composition. In contrast to routine analyses where model version is updated over time and where the observing system also evolve, reanalyses are based on the same model version using the latest reprocessing of the observations. These tasks are implemented by the European Centre for Medium-Range Weather Forecast (ECMWF). In order to evaluate its quality, ECMWF contracts other scientific institutions to compare the CAMS products against independent observations where BIRA-IASB and its stratospheric modelling group are responsible for evaluating the CAMS stratospheric products.

The first aim of this position is then to run the stratospheric evaluation of CAMS, i.e.:

- Run, maintain and improve the system that compares the CAMS products against independent observations for (i) the CAMS routine products (ii) the CAMS reanalysis and (iii) the products from the CAMS updated system before its routine implementing
- Write the evaluation reports and present results during regular meetings
- Contribute to writing papers

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

Because most of the tools to evaluate CAMS already exists, there is time for a second aim in this position. This one is related to data exploitation from chemical reanalyses. In addition to CAMS, other institutions have built their own reanalysis. One has been produced by BIRA-IASB using the BASCOE system which focuses on the stratospheric composition. Another one has been produced by NASA. Here, the goal will be to compare these reanalyses in the upper troposphere lower stratosphere region. With tropospheric pollutants reaching the stratosphere and the expected increase of stratosphere to troposphere exchange, it is important to evaluate how good reanalyses are in this region.

The successful candidate will be supervised by Quentin Errera.

Qualifications

- A Master in Sciences or Engineering(*)
- Some academic training in atmospheric science is a strong asset
- Excellent sense of organization, timeliness
- Good programming skills in Fortran, Python and Bash/Shell
- Knowledge of NetCDF, HDF-5 and GRIB file formats
- Good level in oral and written English, knowledge of Dutch and/or French would be an asset
- Strong motivation, initiative, scientific curiosity and team spirit
- Good communication skills (reading, writing, oral)

(*) *In the situation where 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 he/she takes up the job. To obtain the equivalence, you can choose to apply for it at the French or Dutch speaking community of Belgium. You can find more information on this at <https://www.naricvlaanderen.be/nl/erkenningen> or <https://equisup.cfwb.be/>.*

We offer

- A contract for one year with a possible extension depending on future funding.). Salary is according to the federal regulations for scientific contractual personnel basis.
- Dynamic working environment with international contacts (space agencies, industry, air quality community).
- Refund of commuting expenses when using public transportation or a bicycle.
- Attractive annual leave policy and options to balance professional and personal life (flexible schedule and possibility to work from home).
- Access to special advantages arranged for the employees of the federal scientific institutions (e.g. collective hospital insurance and possibility to take part in training courses).
- Pleasant working atmosphere in a scientific environment located in a green setting in Uccle, Brussels.
- Attractive annual leave policy (minimum 26 days per year)



Interested?

Send your application (CV and cover letter) to:

job-ae@aeronomie.be

with the reference “D33_CAMS2_82” before August 15st, 2023