



VACANCY

BIRA-IASB is hiring a **PhD (M/F/X)**

Deadline for application : April 25, 2022

Planned start date: July 1, 2022

Job title description

BIRA-IASB is opening a PhD position for a 4-year study to join the UV-visible observation team. We are looking for an outstanding, highly motivated student with an MSc in Computer Science, Applied Sciences, Physics or other relevant field to work in Atmospheric Sciences.

Tasks, division, context

The Royal Belgian Institute for Space Aeronomy (BIRA) is a federal research organization. Since its creation in 1964, its main tasks are research and public service in the field of space aeronomy, which includes the study of the physics and chemistry of the atmospheres of the Earth and other planets, and of outer space. BIRA has a strong expertise in designing and operating instruments and experiments to monitor atmospheres and space environment. It has also developed a strong know-how in the exploitation of measurements and their geophysical interpretation using, among others, theoretical and numerical models.

The position is open in the UV-visible observation team. The UV-Vis group, a research team of 18 persons, has developed for about 30 years a strong expertise in the field of ground-based, airborne and satellite atmospheric composition measurements. This includes instrument design, algorithm development, data processing and geophysical interpretation in support of air quality and climate change monitoring. The study implies cooperation with various national and international partners.

Research topic

Satellite UV-visible instruments monitor key atmospheric trace gases relevant for air quality, the ozone layer, and climate. Sulfur dioxide (SO₂) is an air pollutant sounded from space for several decades. It is particularly important since it is emitted by human activities and by volcanoes. The new generation of satellite instruments, such as the Sentinel-5 Precursor mission, have improved spatial resolution allowing the study of emissions and atmospheric phenomena with unprecedented detail. The job will focus on developing new highly sensitive SO₂ algorithms applicable to space observations from current, past and future sensors. The research will aim at retrieving accurate information on the vertical distribution of SO₂ in the atmosphere and to study the short-

More about BIRA-IASB

The Royal Belgian Institute for Space Aeronomy (BIRA-IASB) is a Belgian Federal Scientific Institution. Since its foundation in 1964, BIRA carries out research and provides public service in the field of space aeronomy, i.e. the physics and chemistry of the Earth's atmosphere and of other planets, and of cosmic space.

Our scientists use instruments on the ground, in the air, on board balloons or in space, and numerical models.

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to long-term evolution of this pollutant in relation to atmospheric variability as well as volcanic and human activity. The PhD candidate will work in an international environment, implying the dissemination of results in scientific publications and presentations at international conferences and workshops.

Required competences

- MSc degree in a relevant field for this project (e.g. Computer Science, Applied Sciences, Physics)
- Interest in remote sensing of the atmospheric composition and in atmospheric physics and chemistry
- Good knowledge of scientific programming languages and data visualization tools
- A critical and organized sense for data analysis
- Strong communication skills, including a good proficiency in English (oral and written)
- Ability to work autonomously and in a team
- Good level of flexibility, ready to travel occasionally

Technical skills

- Experience with numerical analysis and statistical methods
- Solid coding skills (e.g. Python, Matlab, C++)
- Good knowledge of scientific data formats (netCDF, geoTiff, ...)
- Experience with Office applications

We offer

- The position is on a contractual basis and fixed for 4 years. Salary is according to the federal regulations for scientific contractual personnel. All relevant work experience (public + private sector) will be considered when determining seniority.
- Possibility to acquire a bonus for bilinguism (Dutch/French)
- Pleasant working atmosphere in a scientific environment located in a green setting in Uccle, Brussels.
- Attractive annual leave policy (minimum 26 days per year)
- Options to balance professional and personal life (flexible schedule) within the 38 hours week
- Full refund of commuting expenses when using public transportation, compensation when using the bicycle
- Possibility to work from home
- Access to special advantages arranged for the employees of the federal scientific institutions: museum card, hospitalization insurance, reductions via the Fed + card, etc.
- Company restaurant with reasonably priced hot meals and salad bar.
- On-site childcare during school holidays in July and August.
- Dynamic working environment with strong international orientation.



Interested ?

Please send your motivation letter and CV to hr-ae@aeronomie.be

and in cc to nicolas.theys@aeronomie.be and michel.vanroozendael@aeronomie.be

with reference: " D31_ SCI_SAT_UVVIS ".