OeAW - Discovering the future

The Space Research Institute (IWF) with about 100 employees from twenty nations, is one of the largest institutes of the Austrian Academy of Sciences (OeAW). The institute is located in the Victor Franz Hess Research Center of the OeAW in the south of Graz and hosts eight research groups on the astrophysics of the solar system, exoplanets, and space instrumentation. The IWF also operates a world-leading satellite laser ranging station at the Lustbühel Observatory.

POSTDOC POSITION (F/M/X) ML supported cloud formation modelling

Job ID: IWF61PD225

The Space Research Institute in Graz invites applications for a

POSTDOC POSITION (F/M/X) ML supported cloud formation modelling

(Full-time employee)

The successful candidate will be part of Prof Christiane Helling's research group Exoplanets: Weather & Climate at the Space Research Institute (IWF) Graz. The project is conducted in collaboration with Prof Robert Peharz from the Graz University of Technology.

In this FWF funded project, we are interested in understanding cloud formation in exoplanets and specifically the formation of molecular cluster as pre-coursers of cloud formation in the diversity of extrasolar planets. We aim to explore advanced neural network architectures, particularly Graph Neural Networks (GNNs) and generative models, to predict the three-dimensional structures and thermo-chemical properties of large molecular clusters—tasks that are computationally prohibitive using traditional methods like Density functional theory (DFT) and molecular dynamics. Our modelling efforts support JWST and CHEOPS in physically interpreting observational data. We further contribute to science case studies and science preparation for PLATO, the high-energy space mission NewATHENA as well as HWO.

Your Tasks

- Develop Neural Network models to predict three dimensional complex molecular cluster structures and thermo-chemical properties.
- Support cloud formation modelling.
- Support scientific data interpretation (e.g., CHEOPS, JWST) and preparation for future missions.
- Publication and support in proposal writing activities, and collaborate with group members.

Your Profile

- Necessary to have:
  - PhD in computational chemistry, theoretical astrophysics / physics , astrochemistry, or computer science.
  - Experiences in programming.
  - Experiences in scientific publishing.
- Beneficial to have:
  - Experiences in astrochemistry, astrophysics, and cloud formation.
  - Practical experience in addressing ML-based research problems

Our Offer

The appointment can begin 1st November 2025; but the starting date is negotiable. The post will be for 2 years initially but can be extended up to 3 years. We offer an annual gross salary of € 69.028,40 according to the collective agreement of the Austrian Academy of Sciences. Included are social benefits and health insurance. Applications must include a cover letter, curriculum vitae, list of publications, statement on research experience (max 2 page) and a plan of how to link to the institute's research (max 1 pages), certificates for full academic record, and two references letters. Please send the application in one PDF file, mentioning JOB-ID: IWF61PD225, to cosima.muck@oeaw.ac.at latest by June 30, 2025.

Inquiries about the position should be directed to Prof Christiane Helling.

APPLY NOW

The Austrian Academy of Sciences (OeAW) pursues a non-discriminatory employment policy and values equal opportunities, as well as diversity. Individuals from underrepresented groups are particularly encouraged to apply.

Contact

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