UNIVERSITY OF COLOGNE

Faculty of Mathematics and Natural Sciences

Postdoc position (f/m/x) in ML-supported observational astrophysics/planet formation

Institute for Astrophysics

We are one of the largest and oldest universities in Europe and one of the most important employers in our region. Our broad range of subjects, the dynamic development of our main research areas and our central location in Cologne make us attractive for students and researchers from around the world. We offer a wide range of career opportunities in science, technology, and administration.

Our institute (https://astro.uni-koeln.de/) is and has been strongly involvedin international astrophysics projects (VLT/I, LBT, ELT, JWST, ALMA, SOFIA, CCAT, Herschel).
In the context of our recently approved Cluster of Excellence DYNAVERSE, we are advertising a position in the area of protoplanetary disks and planet formation.

YOUR TASKS

We are seeking a postdoctoral researcher (f/m/x) who is active in the aforementioned field and will work on combining multi-wavelength and multi-technique observational datasets – with an emphasis on VLTI and VLT – to explore and characterize possible mechanisms of variability in young stellar objects resulting from star/disk and disk/planet interactions.
In particular, our objective is to exploit grids of radiative transfer models and multi-scale hydrodynamic simulations of young disks, developed in part in the cluster, to interpret heterogeneous and sparse snapshots using (un)supervised machine-learning algorithms in the spatial and spectral domains, in particular neural networks.

YOUR PROFILE

- Data reduction and interpretation of long-baseline (infrared and sub-millimetre) interferometry
- High-resolution imaging data reduction and interpretation
- Radiative transfer and hydrodynamic modelling
- Python programming and initial experience with ML/AI methods
- Statistical analysis of data
- Good communication skills in oral and written English

WE OFFER

- The candidate (f/m/x) will cooperate with computer science and ML experts from within the cluster and will collaborate with our institutional partners, including (but not limited to) IPAG in Grenoble (France), UNAM in Mexico, and the MPIA in Heidelberg
- A diverse working environment with equal opportunities
- Support in balancing work and family life
- Extensive advanced training opportunities
- Occupational health management offers
- Flexible working time models
- Opportunity to work remotely

The University of Cologne promotes equal opportunities and diversity. Women will be considered preferentially in accordance with the Equal Opportunities Act of North Rhine-Westphalia (Landesgleichstellungsgesetz – LGG NRW). We also expressly welcome applications from all suitable candidates regardless of their gender, nationality, ethnic and social origin, religion, disability, age, sexual orientation and identity.

The position starts on 01.10.2026 on a full-time basis (39,83 hours per week) and is funded until 30.06.2029. The initial contract runs for two years followed by a possible extension. If the applicant meets the relevant wage requirements and personal qualifications, the salary will be based on remuneration group 13 TV-L of the pay scale for the German public sector.

Please apply online with proof of the required qualifications (including a CV, publication list, a statement of your research interests and two letters of reference from contacts who can be contacted directly) without a photo under: https://jobportal.uni-koeln.de. The reference number is Wiss2604-05. The application deadline is 30.04.2026.

For further inquiries, please contact Professor Dr Lucas Labadie (labadie@ph1.uni-koeln.de) and take a look at our FAQs.

HR EXCELLENCE IN RESEARCH