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To:
Astronomische Gesellschaft
Job Register

April 7, 2021

The LMU Munich invites applications for a

PhD position in the field of planet formation

The position is part of the DFG research unit FOR 2634/2 on transition disks. The project is hosted at the University Observatory of the LMU Munich and runs for 36 months. The project description can be found below.

Applicants should hold a MSc degree or equivalent in Astrophysics, Physics, or related fields at the time of starting the position. Experiences in aspects of planet formation, planet forming disks, celestial mechanics, numerical/computational astrophysics, scientific programming, protoplanetary disk observations, or data analysis are considered a strong asset.

The position is offered in the research group led by Professor Til Birnstiel. Supercomputing resources and funding for computing equipment and travel are available. Salary and social benefits are based on the German scale for public employees (75% TV-L E13).

The group is stationed at the LMU Munich within one of Europe's leading physics departments and embedded in the vibrant astrophysics environment in Munich consisting of MPE, MPA, LMU, ESO, and the ORIGINS cluster which together form one of the largest centers of astrophysical research in the world.

To apply, please send

- a cover letter (email text or PDF)
- a CV (PDF)
- a research statement (PDF describing the motivation to apply for the proposed PhD project and previous research experiences or other accomplishments, max. 2 pages)

via email to jobs2021@usm.lmu.de. In addition, please arrange for 2-3 letters of recommendation to be sent directly from the referees to the same address. All email correspondence should contain the applicant's name in the subject.

Applications will start being reviewed on April 30 and will continue until an offer is accepted. The anticipated starting date is December 2021 or earlier.

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Project Description

The Atacama Large Millimeter/Sub-Millimeter Array (ALMA) has provided a treasure trove of protoplanetary disk data, particularly in high-resolution dust-continuum, but also lower-resolution/large-sample size surveys. We aim to make use of these data by adapting our gas- and dust-disk evolution model twopoppy to treat the build-up, dissipation, and intermediate stage effects including disk winds, planetary gaps, and planetesimal formation. Equipped with such a tool we will (1) carry out disk population synthesis studies to learn which physical mechanisms or parameters (turbulence, particle properties, etc.) are needed to reproduce observational properties of large disk surveys (disk sizes, luminosities, spectral indices, mass distributions, accretion rates, etc.) and we will (2) physically model individual highly-resolved disks with Markov-Chain Monte Carlo (MCMC) samplers to constrain their evolution processes, initial conditions, the planetary properties, and formation times. This project will be carried out in collaboration with P. Pinilla (MPIA), A. Miotello (ESO) G. Rosotti (U. Leiden). It will be a theoretical counterpart to an observational project supervised by A. Miotello.