

The Faculty of Physics has the following job opening:

Research position (PostDoc) in the field of data-intensive radio astronomy



ID: Wiss22596

- Start: 01.10.2022
- fulltime
- salary according to Remuneration level 13 TV-L
- fixed-term

The Faculty of Physics is a member of the German PUNCH4NFDI consortium (Particles, Universe, NuClei and Hadrons for the National Research Data Infrastructure). In Bielefeld research groups from radio astronomy, cosmology and astroparticle physics, as well as numerical quantum field theory work together in PUNCH4NFDI. Within the framework of this consortium, we are active in the area of "data irreversibility". This involves the question of what effects high-level filtering and refinement of data in the course of modern data analysis procedures have on the possibility of making unexpected discoveries, and how the reproducibility of scientific results can be guaranteed under these conditions, e. g. for rare transient events. This problem arises especially in the context of the data rates and data volumes of the Square Kilometre Array, since for technical and economic reasons, only filtered and pre-processed data can be stored. It is our goal to develop methods that minimise this loss of information and maximise the chances of unexpected discoveries. The requirements for archives and data management arising from the problem of data irreversibility will also be investigated.

Your Tasks

- investigation of the information-theoretical foundations of the data irreversibility problem and evaluation of existing methods in radio astronomy with respect to their potential to allow unexpected discoveries (30 %).
- investigation of this problem and related issues in the context of modern radio interferometers (20 %)
- independent research on scientific problems of the PUNCH community, especially in the context of radio astronomy (20 %)
- publication and dissemination of results (20 %)

Your Profile

We expect

- university degree (Master or equivalent) in astronomy, computer science, physics or a related subject
- doctorate in one of the above subjects
- independent scientific work
- ability to write scientific publications and technical documentation independently
- excellent written and spoken English
- excellent communication skills
- experience in project management

- supporting administrative tasks in the context of PUNCH4NFDI (10 %)

The employment is conducive to scientific qualification.

We offer

- salary according to Remuneration level 13 TV-L
- fixed-term (limited until 30.09.2025) (§ 2 (1) sentence 2 of the WissZeitVG; in accordance with the provisions of the WissZeitVG and the Agreement on Satisfactory Conditions of Employment, the length of contract may differ in individual cases)
- fulltime
- internal and external training opportunities
- variety of health, consulting and prevention services
- reconcilability of family and work

Preferred experience and skills

- radio astronomy expertise
- information theory expertise
- algorithmic expertise
- experience in large teams

Application Procedure

We are looking forward to receiving your application. Please include in your application names and contact of at least three persons that are willing to provide letters of reference for you. They will be contacted by us when required. For full consideration, your application should be received via either email (a single PDF document is required) sent to redere@physik.uni-bielefeld.de or post (see postal address). Please mark your application with the identification code: Wiss22596. Please note that the possibility of privacy breaches and unauthorized access by third parties cannot be excluded when communicating via unencrypted e-mail. For Information on the processing of personal data [click here](#).

application deadline: 17.08.2022

Contact

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Bielefeld University has received a number of awards for its achievements as an equal-opportunity employer and has been recognized as a family-friendly university. The university welcomes applications from women. This is particularly true with regard both to academic and technical posts as well as positions in information technology as well as the skilled crafts and trades. Applications are handled according to the provisions of the state statutes on equal opportunity. Applications from suitably qualified handicapped and severely handicapped persons are explicitly encouraged.

At Bielefeld University on request positions can be carried out with reduced working hours as long as this does not conflict with official needs.

