Max-Planck-Institut für Radioastronomie

M2FINDERS-1 - TWO POSTDOCTORAL POSITIONS (m/f/x) IN RADIO ASTRONOMY

The Max Planck Institute for Radio Astronomy (MPIfR) is the leading radio astronomical institute in Germany. It operates the 100-m radio telescope in Effelsberg (as a single telescope and as an element of the European VLBI Network - EVN and the Global Millimetre VLBI Array - GMVA), the LOFAR DE1 station, which is part of the International LOFAR Telescope, the APEX telescope in Chile (also an element of the Event Horizon Telescope - EHT), and a state-of-the-art VLBI (Very Long Baseline Interferometry) correlator. The department of Radio Astronomy/VLBI, led by Prof. Dr. J. A. Zensus, has a broad research portfolio, with a focus on compact extragalactic objects (AGN) and their broad-band emission, through very-high-resolution studies with mm- and space-VLBI imaging and blazar monitoring.

The MPIfR is recruiting up to two **postdoctoral researchers in Radio Astronomy** to join the project M2FINDERS (*Mapping Magnetic Fields with INterferometry Down to Event hoRizon Scales*). M2FINDERS is led by Prof. Zensus as the principal investigator, with funding from the European Research Council (grant agreement No 101018682). The project will use multifrequency polarimetric, spectral, and astrometric measurements to measure and model the strength and the three-dimensional morphology of the magnetic field in the immediate vicinity of supermassive black holes in order to probe the physical conditions on the event horizon scale. The project will comprise a dedicated in depth study of prominent nearby AGN, using multifrequency VLBI observations with the VLBA and EVN at 15, 22, and 43 GHz, the GMVA at 86 GHz, and the EHT at 230 GHz. **The successful candidates will work on *reconstruction of the 3D structure of the magnetic field near supermassive black holes in these AGN***. One of the two positions will be dedicated to development and application of methods for obtaining information about the magnetic field from polarisation mapping and Faraday rotation, turnover frequency imaging, and frequency dependent opacity (core shift). The other position will focus on developing and applying analytical and numerical modelling frameworks for estimating the strength and reconstructing the morphology of magnetic field from the observational measurements listed above. The two researchers will be working in close coordination with each other and with the entire M2FINDERS team.

There will also be opportunities to supervise and collaborate with PhD students and gain teaching experience in the International Max Planck Research School for Astronomy and Astrophysics (IMPRS).

Interested and qualified individuals are encouraged to apply by submitting their curriculum vitae, list of publications, and a research motivation letter. Applicants should also arrange for three letters of recommendation to be sent to the MPIfR application portal at the address given below by **December 31, 2021**.

The initial appointments are for two years with the possibility of extension after review. The anticipated starting date is February 2022, or later. The recruitment process will

remain open until the positions are filled. Remuneration is within the framework of the German wage agreement for the public service (TVöD-Bund) in level 13.

The Max Planck Society is committed to increasing the number of individuals with disabilities in its workforce and therefore encourages applications from such qualified individuals. Furthermore, the Max Planck Society seeks to increase the number of women in areas where they are underrepresented and therefore explicitly encourages women to apply.

Please submit your application at
https://s-lotus.gwdg.de/mpg/mbra/perso/mpifr_bonn_sci_011.nsf/application

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Posting: 15.10.2021