



Indian Institute of Technology Indore

Simrol, Khandwa Road, Indore - 453552, India

Website: www.iiti.ac.in

Annexure A2

Dated: January 31, 2017

Advertisement for a Postdoctoral Position

Applications are invited from motivated and eligible candidates for a postdoctoral position in the research project “Cosmic Reionization with the Square Kilometer Array (SKA)”.

Detection of the highly redshifted 21 cm “spin-flip” transition (Field 1958) of the neutral hydrogen (HI) against the Cosmic Microwave Background (CMB) is considered as a promising probe for the cosmic Dark Ages ($z > 30$ or $\nu < 45$ MHz), the Cosmic Dawn ($30 > z > 15$ or $45 \text{ MHz} < \nu < 90$ MHz), and the Epoch of Reionization ($15 > z > 6$ or $90 \text{ MHz} < \nu < 200$ MHz). Studying the early universe ($z > 6$) through the redshifted 21 cm signal will allow us to understand the nature of the first stars, galaxies and black holes. Detection of this faint cosmological HI signal (~ 10 -100 mK) with the single antenna-based approach needs to achieve dynamic ranges of $\sim 10^4 - 10^6$ in the presence of strong Galactic and extragalactic foregrounds ($> 10^3 - 10^4$ K). In addition, the ground-based experiments will be affected by the human-generated RFI (Radio Frequency Interferences) like the FM- band (87.5 – 110 MHz) and Earth’s ionosphere. We expect the successful candidate to work on improved foreground removal algorithms from SKA-like observations.

Eligibility: Ph.D. in *Physics, Astrophysics or related area*. Please note that you should have defended your Ph.D. dissertation.

Stipend:

Postdoctoral Fellow will be paid consolidated salary based on the following salary structure of the DST for Research Associate.

Category	Emoluments per month
Research Associate-I	Rs. 36,000/-
Research Associate-II	Rs. 38,000/-
Research Associate-III	Rs. 40,000/-

The category will be decided/recommended by the selection committee based on the qualification/Experience/Performance in the interview of the candidate.

Service conditions:

(i) DA: Postdoctoral Fellow will not be entitled to DA.

(ii) House Rent Allowance (HRA): All Postdoctoral Fellow may be provided accommodation based on availability and those residing in accommodation provided by the institute will not be eligible for drawing HRA. Wherever provision of hostel accommodation is not possible, HRA may be allowed to Postdoctoral Fellow as per Government norms applicable in the city/location where they are working. The fellowship amount may be taken as basic for calculating the HRA.

(iii) Medical Benefits: The Postdoctoral Fellow will be entitled for medical allowance as per institute policy.

(iv) The travel entitlement for Postdoctoral Fellow for participation in scientific events/workshops in India will continue to be as per institute norms.



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Duration: The appointment is for one year.

Interested candidates are requested to submit a detailed CV to **Dr. Abhirup Datta**, via e-mail: abhirup.datta@iiti.ac.in by February 15, 2017.

Only shortlisted candidates will be intimated by email for an interview. No TA/DA will be paid for appearing in the interview.