



## **Indian Institute of Science Education and Research Bhopal**

### **Junior Research Fellow at IISER Bhopal**

Applications are invited from Indian nationals for the post of “Junior Research Fellow” in the SERB sponsored project “Inflation with antisymmetric tensor field”.

#### **Project description:**

Inflation as a theory, has been successful in describing the structure and evolution of our universe. As ordinary matter or radiation can not source inflation, several models have been built to describe inflation where a hypothetical field may it be scalar, vector or tensor drives the inflation. Many theories have considered the scalar field called “inflaton” as the source for inflation and are able to describe the cosmology of universe. Most of the single scalar field models having simple form of potential are ruled out as they are not compatible with the Planck's observational data for the cosmic microwave background. Another class of models considers a vector field as an alternative to the inflaton. But almost all of these models suffer from instabilities like ghost instability and gradient instability which leads to an unstable vacuum. Next we propose here to investigate the possibility of inflation with a model of antisymmetric tensor field having minimal and non minimal couplings to gravity.

**Duration:** The initial offer will be for six months that may be extended upto one year or more based on performance and availability of funds.

**Last date for applications:** 31<sup>st</sup>July, 2024

#### **Essential Qualifications:** M.S.-Physics

Candidates who have qualified a National Eligibility Test (UGC, CSIR, LS, GATE, JEST etc.) and have research experience of two years or more will be eligible for the SRF position.

**Desirable:** Candidates with prior experience in working with antisymmetric inflation models, Palatini formalism will be given preference.

**Salary:**

Junior Research Fellow: Rs. 37,000 p.m. + HRA (16%)

**How to Apply:** Interested candidates are requested to send their CV (including name, date of birth, address for communication, phone number, email id, details of educational and scientific accomplishments, list of publications and copy of the certificate of GATE/CSIR-JRF/UGC-JRF/JEST/Inspire-PhD/LS) to Dr. Sukanta Panda over email ([sukanta@iiserb.ac.in](mailto:sukanta@iiserb.ac.in)). The subject line must contain “JRF application”.

No correspondence will be entertained with regard to the application status. All correspondence regarding Shortlisting and selection will only be via email. Shortlisted candidates will be called for an online/offline interview. The selected candidate will be expected to join at the earliest possibility.