

Postdoctoral Position in CMB cosmology and neutrino physics

- IJCLab, Orsay, France
- **Deadline on Dec 15, 2022**

Job description:

Applications are invited for a postdoctoral research position on combining CMB analyses and the impact of neutrino physics and extension of Λ CDM in current cosmological constraints, within the French ANR funded project BATMAN (Better Accuracy and robustness for Mass Assessment of Neutrino). The project aims at using the combined current CMB observations with better and coherent modelling of astrophysics signals and systematics to constrain the neutrino mass and extensions of the standard Λ CDM model.

The post is available for a fixed-term duration of 24 months. The expected start is in spring 2023 at the earliest and no later than December 2023. Candidates must hold a PhD in Physics or Astronomy by the date of the appointment.

Project Description:

The post holder will work with Matthieu Tristram on the exploitation of the latest CMB measurements (from space mission and ground based observatories) to derive robust and precise constraints on the neutrino sector including the neutrino hierarchy but not exclusively. The successful applicant will be in charge of the development of a likelihood combining existing CMB datasets and taking benefits of new models to accurately describe foreground residuals in CMB angular power spectra. The postdoc will make use of public data (such as Planck) as well as upcoming data releases from ground based experiments (advACT and SPT3g).

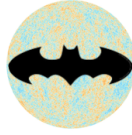
Skills:

We expect the successful candidate to have good general knowledge of modern cosmology, applied statistics, numerical methods and programming languages as well as some experience in data analysis of cosmological data sets. Knowledge of neutrino physics would be desirable.

Work Context:

The postdoc will be integrated within the research team of the Irene Joliot Curie laboratory which is located in the Paris-Saclay University (Orsay, France) which provides a top-level scientific environment for the candidate's stimulation, support, diversity and activities beyond this project.

The ANR project contains three nodes: one for the study of secondary anisotropies, mainly reionisation epoch, and their impact on cosmological constraints (IAS, Orsay), one for the study of gas physics involved in CMB analyses (IRAP, Toulouse), one of the building of coherent likelihood of combined CMB observations and modelling of extension of Λ CDM (IJCLab, Orsay-Paris).



The position will thus involve team work and close collaboration with the partner teams.

Included benefits: health insurance, holidays, retirement scheme.

Application:

Deadline for application: 15 december 2022

The application should include a cover letter, a research statement, a CV, a list of selected publications (max 10) in a single file in PDF format to be sent, by email only to batman-anr-admin@ias.u-psud.fr, stating in the subject: **PostDoc-CMB**

2 Letters of Reference should be sent at the same email address.

We seek a diverse pool of applicants and we will consider all applications on equal basis.

Candidates can contact the BATMAN team at batman-anr-admin.ias@universite-paris-saclay.fr and browse the BATMAN website: <https://batman-anr.ias.universite-paris-saclay.fr/>