

JOB DESCRIPTION

Job Title : Post-Doctoral position in numerical cosmology, reionization and 21cm signal prediction

Job Summary :

(English, max 1000 characters)

The Strasbourg Numerical Cosmology Group is looking for a post-doctoral collaborator to conduct research related to the prediction of the 21 cm signal of reionization. The position is for two-years at the Strasbourg Astronomical Observatory, starting during Fall 2019, and will be suited to scientists with an expertise in the astrophysics of large scale structures in the high-z Universe and in numerical simulations techniques.

Job Description :

The Strasbourg Numerical Cosmology Group is looking for a post-doctoral collaborator to conduct research related to the prediction of the 21 cm signal of reionization.

Over the past ten years, the Strasbourg Astronomical Observatory has developed an internationally recognized expertise in the study of cosmological reionization. This expertise is based on the development of locally developed codes (ATON, RAMSES-CUDATON, EMMA), which routinely use graphics cards (GPUs) to accelerate their calculations, and the production of massive simulations defining the state of the art (CoDa I/ CoDa I-AMR / CoDa II) of reionization numerical studies. Thanks to these developments, the group regularly gains access to national and international supercomputing facilities to run its own models.

The collaborator will be in charge of developing further the simulation tools developed at the Strasbourg Astronomical Observatory and making them suitable for modelling the radio signal of intergalactic gas at large redshift, for the SKA and precursor instruments (NenuFAR, LoFAR, etc.).

Ideally, the candidate will have expertise in numerical simulation, high performance computing (GPUs, massively parallel systems) heavy data processing. The candidate is also expected to have a good knowledge of the physical processes at play during these epochs, including the formation of the first galaxies, radiative transfer., the physics of quasars, and on radio signal generation by the intergalactic medium and instrumental detection. A knowledge of deep learning techniques will also be appreciated.

The candidate will become a member of the GALHECOS Team, at the Astronomical Observatory of Strasbourg and work under the supervision of Professor Dominique Aubert and in collaboration with Drs. P. Ocvirk and J. Chardin. The appointment is for two years, starting before December 2019. The salary, depending on past experience, will be between 2 700 et 3 800 euros per months. Funding for travel, conferences and hardware will also be made available.

Main research field :

Astronomy

Offer Requirements :

The candidate must send a statement of past research, a CV and 2 references for recommendations. Support letters will be inquired after a first application review.

Eligibility criteria :

The candidate must have obtained a PhD in Astrophysics, Physics or related field, after the 1st of January 2015. Recipients of a Strasbourg University doctorate must have a minimum of two-years international post-doctoral experience.

JOB DETAIL

Type of contract : Temporary

Status : Post-Doc

Company / Institute : Astronomical Observatory of Strasbourg

Country : France

City : Strasbourg

Postal Code : 67000

Street : rue de l'Université

APPLICATION DETAILS (mandatory)

Provisional start date : 01/11/2019

Application e-mail : dominique.aubert@astro.unistra.fr

WARNING: This is the contact e-mail for applicants