

Opening of a tenure-track CNRS position « KIDS4CMB »

In February 2024, the CNRS will be announcing the opening of a Junior Professorship (CPJ) to study CMB using KIDS detector technology (acronym KIDS4CMB). The successful candidate will be affiliated with one of the following three Grenoble laboratories: Néel Insitute, LPSC, IPAG, which have been collaborating for many years on this subject with IRAM within the GIS-KIDS. Since the 1980s, our collaboration has been developing cutting-edge instruments for astrophysics and cosmology, from laboratory design to final data processing, including laboratory characterization, on-site integration and commissioning. This has enabled us to make a major contribution to the construction and scientific exploitation of major experiments in cosmology, such as Archeops and Planck. Since 2009, we have been pioneers and leaders in the use of new ultra-low-temperature superconducting Kinetic Inductance Detectors (KIDs) for ground-based astronomy at millimeter wavelengths. We have built, deployed and operated several KID-based instruments: imagers such as NIKA and NIKA2, and spectroscopy instruments such as KISS and CONCERTO.

The candidate's scientific project will focus on the measurement of CMB polarization anisotropies (Simons Observatory and CMB-S4) and the preparation of future space missions aimed, for example, at measuring CMB spectral distortions. This project will range from the development of KID detectors to meet these objectives, to the exploitation and analysis of data from instruments using these detectors. In order to contribute to local dynamics, the candidate will acquire cross-disciplinary expertise that will give him or her a vision of the issues at stake in cosmology and fundamental physics, and the challenges posed by experimentation and observation.

- For the Néel institute (HELFA team), we are looking to recruit a researcher who can contribute new ideas and skills in instrumentation in the following areas: exploration of new superconducting detector configurations, cryogenics, innovative electromagnetic configurations, particularly at radio frequencies, nanofabrication processes, electronics, data acquisition, as well as exploration of new scientific applications, etc. The ideal candidate is an instrumentalist researcher with solid experimental experience in low-temperature physics and electromagnetics. The ideal candidate is an instrumentalist researcher, with solid experimental experience in low-temperature physics and electromagnetism.

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- For the LPSC (COSMO-ML team), we are looking to recruit a researcher to contribute to the team's activities, which range from involvement in the design and construction of millimeter-wave cameras using KIDS to the exploitation of scientific data for cosmology. The candidate's research project may include instrumental activities (detector characterization, readout system, acquisition, optics, calibration) and data analysis activities (commissioning, analysis pipeline, cosmological exploitation). The candidate will propose a project with strong involvement in major international collaborations to develop and exploit future cosmology instruments.

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- For the Grenoble Institute of Planetology and Astrophysics (IPAG, Interstellar team), we are looking to recruit a researcher who masters the entire data processing chain, from instrument to final scientific analysis. This will include the ability to take part in the initial laboratory data collection during the development of a new instrument, and then in the commissioning phases of the instrument at its observation site. Solid experience in the analysis of millimeter astrophysical data is required, applied to CMB measurements or foreground dust emission, or more broadly to the characterization of diffuse backgrounds or interstellar medium emission.

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This is a tenure-track position aimed at researchers with significant experience in the scientific field (salary will depend on experience). It comes with research funding of 200,000 euros and will lead to a permanent position as a DR2 research director at the CNRS after 3 to 6 years, following a positive evaluation by a tenure commission. It also includes 42 hours of teaching (in English or French) per year prior to tenure.

Candidates are strongly encouraged to contact the host laboratories to prepare their induction and research program. The job description and exact terms and conditions will be posted on the jobs.cnrs.fr website.

Provisional timetable (to be confirmed):

- From 14/02/2024 to 20/03/2024 for applications
- Examination of applications from 04/17/2024 to 06/27/2024
- Auditions from 02/05/2024 to 12/07/2024
- Assumption of duties from September 1, 2024