POSTDOCTORAL RESEARCH ASSOCIATE
QUBIC CMB POLARIZATION EXPERIMENT

Position location: APC, 10, rue A. Domon & Léonie Duquet - 75013 Paris - France

Contract: Researcher CDD (Contrat à Durée Déterminée)

Initial contract duration: 12 months

Starting date: to be discussed

Salary: depending on experience

JOB DESCRIPTION

We are searching for a Postdoctoral Research Associate to join the QUBIC CMB Polarization experiment (http://qubic.in2p3.fr). QUBIC is the first Bolometric Interferometer, a novel technology comprising the exquisite sensitivity of TES bolometers and the purity in terms of instrumental systematics allowed by interferometry. QUBIC is being built right now with a Technological Demonstrator to be operated in the laboratory during 2018 for calibration and testing and then installed on the QUBIC site in Argentina (Salta province, 5000m a.s.l.) at the end of 2018. This will be followed by the upgrade to the First Instrument in 2019. With 2000 TES bolometers and an interferometer array of 400 antennas, QUBIC will achieve a constraint σ(r)=0.01 with two years of data taking. QUBIC is an international experiment, lead by APC, Paris with teams from France, Italy, United-Kingdom, Ireland, the United-States of America and Argentina.

Two different kind of activities are in our current priority for recruitment and we therefore search for applicants with skills covering one or both of these activities:

1. **Integration and Testing:**
   - Direct participation to the integration of the Technological Demonstrator and the First Instrument
   - Performing the tests and calibration during integration and commissioning, which involves programming data acquisition scripts, executing the tests and analyzing the data
2. **Data Analysis and Simulations**
   - Developing the pipeline (mainly written in Python) for the experiment including
     - TOD simulations
     - map-making and power spectra estimation
     - foreground modeling and removal
     - Self-Calibration
     - Cosmological constraints

Experience in any of the following fields is highly desirable: CMB instrumentation, Integration and Testing, Astrophysical data analysis and strong computing skills (eg. High Performance Computing). The successful applicant will spend most of his time working at APC, Paris with important collaborations with other teams involved in the work package (mostly in France, Italy and Argentina). Enthusiasm for participating to the instrument integration and commissioning is an important point.

Applicants are expected to provide a Curriculum Vitae, a Cover Letter and Letters of Recommendation by July 1st 2018. Please direct applications to Dr Jean-Christophe Hamilton (hamilton@apc.in2p3.fr), Spokesperson of the QUBIC Project and Yannick Giraud-Héraud (yannick.giraud-heraud@in2p3.fr), coordinator of the Labex Univ'EarthS Work Package.

For questions please contact:

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