

Job description:

Senior experienced researcher position (1-year, LPNHE Paris)

The *Laboratoire de Physique Nucléaire et de Hautes Energies (LPNHE)* - UMR 7585 invites applications for a position of Senior Experienced Researcher (duration 12 months) in the “FTK” project. The position could already start during October 2013. The project is funded by the European Commission's Marie Curie Actions IAPP program. In accordance with IAPP funding conditions, candidates must have **at least ten years of full-time equivalent research experience**, including the years spent on PhD studies, **and must not have resided or carried out their main employment activity in France for more than 12 months in the 3 years immediately prior to the date of appointment.**

Description

The Laboratoire de Physique Nucleaire et des Hautes Energies (LPNHE) is a mixed research unit under the joint supervision of CNRS/IN2P3, Université Pierre et Marie Curie (Paris VI) and Université Paris Diderot (Paris VII).

The IAPP “FTK” Project aims to develop an extremely fast but compact processor, with supercomputer performances, for pattern recognition, data reduction, and information extraction in high-quality image processing.

The first goal of the “FTK” project consists in demonstrating the system can perform online track reconstruction of full events at the highest luminosities of the LHC and SLHC) at CERN, beyond the limits of any existent or planned device and despite the overwhelming confusion due to the very high track multiplicity and the exceedingly large event pile-up. With this goal we participate to the construction and the test for a high precision real-time tracker built for the ATLAS experiment: the Fast Track (FTK) processor.

The “Silicon Detector R&D” work package of the “FTK” project provides a solid link with the evolution of the on-going R&D for the silicon sensors and the front-end readout electronics in view of the high luminosity upgrade of the LHC. This link is important for FTK since a constant dependence connects the evolving features of the future tracker (segmentation, geometry, expected hit efficiency, noise, readout speed) with the future of the FTK architecture.

The recruited senior experienced researcher will work on the main online tracking WPs and also on the “Silicon Detector R&D” WP of the “FTK” project. The researcher will participate on the setup and management of a test stand for FTK prototypes at LPNHE and also to the pixel sensor R&D providing the necessary link between the two aspects of the whole project.

Suitable candidates should have prior experience in silicon detectors (sensors and readout electronics) and online tracking systems.

The following skills will be taken in consideration for evaluation:

- Knowledge of at least one hardware description language
- Experience with digital simulation tools (Cadence Incisiv is preferred)
- Familiarity with one or more IC design CAD packages (Cadence Encounter and Virtuoso are preferred)
- Above average familiarity with UNIX operating system

The candidate must have good written and oral English; French is appreciated, but not strictly

necessary.

Applicants should send curriculum vitae, list of most relevant publications and the names of two reference persons to be sent to:

Dr. G. Calderini (giovanni.calderini@lpnhe.in2p3.fr).

Deadline for applications is September 25th 2013.

Contact: [Dr. Giovanni Calderini](mailto:giovanni.calderini@lpnhe.in2p3.fr)

Email: giovanni.calderini@lpnhe.in2p3.fr

Letters of Reference should be sent to: giovanni.calderini@lpnhe.in2p3.fr