

Post-doctoral Research Position in Experimental Particle Physics ATLAS Experiment

Applications are invited for a post-doctoral position in the ATLAS group at the Center for Particle Physics of Marseille (CPPM), France. The successful candidate is expected to work on the Phase II upgrade of the ATLAS Liquid Argon (LAr) calorimeter.

CPPM is involved in several major projects in experimental particle physics, astroparticle, cosmology and interdisciplinary applications. The ATLAS group at CPPM gathers about forty-five people, including seventeen staff physicists and eleven PhD students. The group played a major role in the design, construction and operation of the electromagnetic calorimeters, the pixel detector and the trigger system, and pursues a strong R&D effort for planned future upgrades of the detector, notably for the LAr calorimeter, as well as a key contribution to physics analysis in ATLAS.

The successful candidate is expected to take a leading role in the phase II LAr upgrade project and more particularly in the development of data processing algorithms allowing to efficiently compute the energies deposited in the LAr calorimeters in the high pileup conditions expected at the HL-LHC. These algorithms will be based on Artificial Intelligence (AI) techniques such as recurrent neural networks and will be adapted to fit on hardware processing units based on high-end FPGAs. The successful candidate will be responsible of designing the AI algorithms and assessing their performance. She/he will work closely with the engineers designing the electronic cards at CPPM in order to adapt the AI algorithm to the specifics of FPGAs. Candidates with a strong interest for hardware will be encouraged to take part in the design of the firmware to program the FPGAs. The candidate has the possibility to also contribute to physics analysis prospects for the HL-LHC especially the performance of the calorimeter triggers.

The position is funded by the AMIDEX foundation in collaboration with the Technische Universität Dresden. It is for a fixed term of two years, and is based in Marseille, with frequent travels to CERN. The starting date for the position is autumn 2019 (latest beginning of 2020). Candidates should have a PhD in experimental particle physics by the date of appointment. Good communication skills are expected.

Candidates are invited to send their complete application package (CV, cover letter and statement of research interests, list of publications) to Dr. Georges Aad, aad@cern.ch, and to arrange for three letters of recommendation to be sent to the same address. The review of applications will start in July 2019 and will continue until the position is filled.

Further inquiries about the CPPM ATLAS group and the position should be addressed to Dr. Georges Aad (aad@cern.ch).