PhD Position in Experimental Particle Physics
ATLAS Experiment

Applications are invited for a PhD position in the ATLAS group at the Center for Particle Physics of Marseille (CPPM), France. The successful candidate is expected to work on the development of Artificial Intelligence (AI) algorithms applied to hardware processing units based on FPGAs for the phase II upgrade of the ATLAS detector.

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 fourteen PhD students. The group played a major role in the design and construction of the electromagnetic end-cap 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 Liquid Argon (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 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 AI techniques such as recurrent neural networks and will be adapted to fit on hardware processing units based on high-end FPGA. 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 starting date for the position is in autumn 2020. Candidates should have a Masters degree by the date of appointment. Good communication skills are expected. Details about the project can be found on https://college-doctoral.univ-amu.fr/fr/call-for-applications-to-the-aidocamu-doctoral-program-in-artificial-intelligence (project number 6). Candidates are invited to submit their complete application before 28/06/2020 on https://college-doctoral.univ-amu.fr/en/node/add/aap-aidoc.

Further inquiries about the CPPM ATLAS group and the position should be addressed to Georges Aad (aad@cern.ch) and Emmanuel Monnier (monnier@in2p3.fr).