The Department of Particle Physics of CEA-Saclay as well as the Johannes Gutenberg-Universität Mainz (Germany) and its Cluster of Excellence PRISMA+ invite applications for a

Joint international Ph.D. student position

to pursue studies on the ATLAS experiment at the LHC on the

Measurement of the weak mixing angle and of the Z boson mass in the muon-antimuon final state

The successful candidate will be based during the course of the PhD program both in France and Germany for a significant fraction of time, leading to a PhD by both institutions. Longer research stays at CERN are foreseen.

The CEA and Mainz groups are actively involved in ATLAS since many years, mainly in the design and construction of the liquid argon electromagnetic calorimeter, the trigger system and the muon spectrometer. Both groups gather a broad expertise in detector and reconstruction aspects as well as in physics analysis.

Given the chance to participate at a joint PhD program, we are seeking outstanding PhD candidates to contribute to our efforts in measuring the weak mixing angle and the Z boson mass with the ATLAS detector at the LHC. In the Standard Model (SM), firm relations connect the masses and couplings of the W, Z and Higgs bosons, and the mass of top quark; theories predicting new particles or interaction modify these relations. The measurement of the weak mixing angle falls within this effort to perform stringent tests of the SM. The measurement of the Z boson mass is connected to the ultimate uncertainties on the W boson mass.

Applicants are required to hold an academic master degree in physics, with sound theoretical education. A written scientific master thesis summarizing an independently conducted research project would be valuable. Experience in data-analysis, programming (Python/C++) as well as statistics is desirable. In addition, an English language level of at least B2 is required.

CEA Saclay and the Johannes Gutenberg-Universität Mainz aim at increasing the percentage of women in academic positions and strongly encourage women scientists to apply. The universities are an equal opportunity employer and particularly welcome applications from persons with disabilities. German or French language skills are not necessarily required.

Qualified candidates are requested to submit their application, including a curriculum vitae, a brief description of their research experience and interests and one letter of recommendation, to Prof. Stefan Tapprogge (Email: tapprogg@uni-mainz.de) until 14th of June 2021.

Contact for further questions:

- Dr. Fabrice Balli (Email: abrice.balli@cern.ch, Paris Saclay)
- Dr. Maarten Boonekamp (Email: Maarten.Boonekamp@cern.ch, Paris Saclay)
- Prof. Dr. Stefan Tapprogge (Email: tapprogg@uni-mainz.de, Uni Mainz)
- Prof. Dr. Matthias Schott (Email: schottm@uni-mainz.de, Uni Mainz)