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PhD positions at IFIC Valencia: LHC and future colliders

Date: 15th April 2019

The ATLAS/future colliders group at IFIC consists of 5 staff researchers, 5 post-docs and 4 Ph.D. students. The group is very active in the analysis of the data collected by the ATLAS experiment at the Large Hadron Collider. Group members have made particularly strong contributions to searches for physics beyond the Standard Model and to studies of the top quark. Our group is moreover deeply involved in the international effort to construct a high-energy, linear electron-positron collider. Group members play an important role in studies of the potential of the linear collider and the definition of the scientific programme and make important contributions to the development of accelerator and detector technology.

The group and the international research it is involved in offer a challenging learning environment for excellent Ph.D. students. The successful candidate will enroll in the doctorate programme of the Valencia University and perform cutting-edge research in collaboration and with stays at major international scientific facilities (CERN, KEK, DESY). Our group has a broad expertise, from the development of new analysis techniques to detector and accelerator technology. The group is very well connected to leading international experimental and theory groups, where students regularly enjoy secondments.

The group's activities are funded through the Spanish national programme for particle physics, several EU projects and excellence programmes of the regional government of Valencia (*Prometeo, Plan GenT*) and of the Spanish Ministry (*Severo Ochoa*).

We offer two Ph.D. positions in our group:

- top quark pole mass measurement from the cross section for top quark pair production in association with an energetic jet and using 13 TeV data of the ATLAS experiment at the LHC,
- development of next-generation pixel detectors for vertexing at present and future electron-positron colliders. The candidate will engage in the R&D programme to develop novel pixel detectors with integrated cooling channels.

We expect candidates to demonstrate a lively interest in the exciting fundamental physics of energy-frontier collider facilities. The candidates should be capable of developing a new initiative in close collaboration with group members and theoretical physicists at IFIC and in other institutes. Our programme offers an excellent opportunity to take the first steps of your scientific career in an internationally recognized group. The contracts and associated salary will follow the usual Spanish regulation to realize PhDs.

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