

Open position in experimental dark matter physics

The Experimental Neutrino Physics Group at the Instituto de Física Corpuscular (IFIC) welcomes applications for a research contract to get initiated into Dark Matter searches with a fixed target experiment. IFIC is a joint centre of CSIC (the Spanish National Research Council) and the Universitat de València devoted to experimental and theoretical research in particle physics.

The student will work on the NA64 experiment at the CERN Super Proton Synchrotron (SPS) accelerator. NA64 pioneered and is one of the the world-leading experiments looking for Light Dark Matter produced after the collision of a high energy electron with a heavy nucleus. In 2022, the experiment has multiplied by three times its statistics while remaining background-free, two key elements which make it able to probe for the first time the favoured parameter space suggested by the theoretical models. The successful applicant will be able to participate in the analysis of the newly collected data, getting familiar with all the experiment elements, including calorimeters and tracking detectors. The involvement in phenomenological studies with IFIC collaborators will be also a possibility. In addition, the work would be complemented with Geant4-based simulations to understand the potential sources of background in this type of searches. Finally, this project would be carried out in close collaboration with people based at CERN and ETH Zürich, and in the context of the NA64 collaboration, a small (~50 researchers) international collaboration where the work performed by the potential candidate could have a strong impact and visibility.

Applicants are expected preferably to have a master's degree in physics (good knowledge of experimental particle physics will be valued). Prior experience in the field or analysis and software skills are not required, but will also be valued positively. The post will require international travel, participation in data taking periods at CERN and to attend (online) meetings. The dissemination of results in oral presentations at meetings and conferences in English is also expected, so good English skills would be also appreciated. The position, funded by the Spanish Ministerio de Ciencia e Innovación, is to get initiated into research and has a duration of 1 year. It can be extended, depending on funding availability, to more years with the possibility to develop a PhD thesis.

Interested candidates are requested to send their application, including a motivation letter, CV, academic transcripts, and if possible a recommendation letter to Dr. Laura Molina Bueno (laura.molina@ific.uv.es). Review of applications will start as soon as the first applications are received and continue until the position is filled.