



GOBIERNO  
DE ESPAÑA

MINISTERIO  
DE CIENCIA  
E INNOVACIÓN



INSTITUTO DE FÍSICA  
CORPUSCULAR (IFIC)

## PhD position in experimental neutrino physics

The **Experimental Neutrino Physics Group** at the **Instituto de Física Corpuscular (IFIC)** welcomes applications for an open position as PhD student to work on the **Deep Underground Neutrino Experiment (DUNE)**.

**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. **Our group** participates in two experiments –**DUNE** and **NEXT**– that study the properties of neutrinos, the most abundant matter particles in the universe, but the least understood.

DUNE is an international experiment for neutrino science under construction in the USA. Once built, the experiment will consist of two new, leading-edge neutrino detectors exposed to a high-intensity muon-neutrino beam that will be generated at Fermilab (Illinois, USA). The so-called near detector, located approximately 0.6 km downstream of the neutrino source, will characterize the energy and composition of the beam before oscillations. Neutrinos will oscillate in their journey of 1300 km from Fermilab to the far detector, a modular liquid argon time-projection chamber (LArTPC) with an active mass of nearly 70000 tons, that will be built at a depth of 1.5 km at the Sanford Underground Research Facility (South Dakota, USA). DUNE will tackle fundamental questions about the nature of matter and the evolution of the universe through the precision study of neutrino oscillations and other phenomena beyond the Standard Model (BSM).

Our group is currently involved in the **development of the photon detection and temperature monitoring systems** of the DUNE far detector, with activities both in our laboratory and in the large-scale prototype at CERN (ProtoDUNE). Also, the group has a leading role in the search for **BSM physics**; in particular, searches for dark sectors in the MeV–GeV mass range, which can explain the origin of neutrino masses or address experimental anomalies such as the anomalous muon magnetic moment.

Applicants are expected to have a **master's degree in physics** (preferably, with good knowledge of experimental particle physics) and an interest in developing the next generation of neutrino detectors. Prior experience in the field or hardware and coding skills are not required, but will be valued positively. The successful applicant will have the opportunity to learn how to build detectors and how to optimize them, as well as how to analyze the data they produce. The post will require international travel and to attend (online) meetings outside usual working hours. The dissemination of results in oral presentations at meetings and conferences is also expected. The position, funded by the Spanish Ministerio de Ciencia e Innovación, has a duration of **4 years**. Interested candidates are requested to send their application, including a motivation letter, CV, academic transcripts, and the contact information of two people who could provide letters of reference to **Dr Anselmo Cervera** (anselmo.cervera@ific.uv.es), **Dr Laura Molina Bueno** (laura.molina@ific.uv.es) and **Dr Justo Martín-Albo** (justo.martin-albo@ific.uv.es).

Review of applications will start as soon as the first applications are received and continue until the position is filled.