

The **LHCPHENO theory group** (<https://lhcpheo.ific.uv-csic.es>) at Instituto de Física Corpuscular IFIC, a joint research institute of the University of Valencia and the Spanish Research Council CSIC, is looking for a highly motivated and talented candidate to join us as a PhD researcher in **theoretical particle physics**.

The PhD candidate will develop a research project in one of these three topics under the supervision of a senior researcher:

- 1) **Electroweak symmetry breaking and extensions of the Standard Model:** this includes models with extended scalar and electroweak scenarios, e.g. leptoquarks and models with multiple Higgs bosons, new tools in effective field theories (EFT), strongly coupled scenarios and long-lived particles;
- 2) **The quantum frontier for scattering processes at high energies:** this includes scattering amplitudes and factorization breaking effects at high perturbative orders for Higgs boson production at hadron colliders, and quantum algorithms/quantum machine learning in high energy physics;
- 3) **Precision flavor dynamics at the intensity frontier:** this includes CP violation in heavy flavour physics, nuclear and neutron beta decay, lepton flavour violation and EFT analysis of neutrino physics.

The senior researchers of the group include: Germán RODRIGO, Martín GONZÁLEZ ALONSO, Antonio PICH, Jorge PORTOLÉS, Leandro CIERI, Emilie PASSEMAR, Antonio RODRÍGUEZ-SÁNCHEZ and José ZURITA, together with a dynamic international team of postdoctoral and PhD researchers.

The successful candidate will be offered a full-time predoctoral contract for four years (former FPI fellowships) as a CSIC employee, a competitive salary based on the CSIC PhD scale, access to state-of-the-art facilities and international collaborations, and support to attend training schools and international conferences.

Qualifications:

- A Master's degree (or equivalent) in Physics or a closely related field.
- Solid foundations in theoretical particle physics.
- Strong analytical skills and the ability to work independently as part of a research team.
- Good written and spoken English communication skills.

How to Apply:

Interested candidates are requested to submit the following documents:

- A detailed CV.
- A cover letter outlining research interests and motivation.
- Copies of transcripts and degree certificates.
- Contact information for academic references.

Applications Deadline:

Applications must be submitted by the **31 December 2024** to german.rodriigo@csic.es. Shortlisted candidates will be invited for an interview.