



## CALL FOR APPLICATIONS - July 2022

### PhD Position

Donostia International Physics Center (DIPC) is currently accepting applications for PhD positions. This is a unique opportunity for highly motivated students, recently graduated from the university in Physics or related fields, to join one of DIPC's high-profile research teams. A description of each of the available openings, contact information and deadlines can be found on the following pages.

Openings with a duration of more than one year are for a 1-year contract, renewable based on performance and availability of funding.

Although candidates are welcome to contact the project supervisors to know further details about the proposed research activity, please be aware that the application will be evaluated only if it is submitted directly to the email address listed as "application email".

Applications received by the deadline will be evaluated by a Committee designed by the DIPC board on the basis of the following criteria:

- CV of the candidate (40%)
- Adequacy of the candidate's scientific background to the project (40%)
- Reference letters (10%)
- Other: Diversity in gender, race, nationality, etc. (10%)

Evaluation results will be communicated to the candidates soon after. Positions will only be filled if qualified candidates are found.

The DIPC may revoke its decision if the candidate fails to join by the appointed time, in which case the position will be awarded to the candidate with the next highest score, provided it is above 50 (out of 100).

However, the selected candidate may keep the position if, in the opinion of the Selection Committee, the candidate duly justifies the reasons why he or she cannot join before the specified deadline, and as long as the project allows it.

**Ref. 2022/41**  
**Neutrinoless double beta decay with the NEXT experiment**

**Supervisor(s):**

*Stefano Roberto Soleti (roberto.soleti@gmail.com)*

*Francesc Monrabal (francesc.monrabal@dipc.org)*

**Duration\*:** 3 years

**Application Deadline:** 21/07/2022

**Application Email:** jobs.research@dipc.org

The Neutrino Experiment with a Xenon TPC (NEXT) is an experiment located at the Canfranc Underground Laboratory (LSC) whose goal is to search for an ultra-rare nuclear process called neutrinoless double beta decay ( $0\nu\beta\beta$ ).

The eventual observation of this process could help to answer some of the fundamental questions still open in particle physics. It would demonstrate that neutrinos are their own antiparticles, which would make them the only Majorana particles in the Standard Model. It would also provide a potential explanation for the matter-antimatter asymmetry of the universe through the leptogenesis mechanism. The experimental apparatus of NEXT consists of a time projection chamber filled with high-pressure gaseous xenon (HPXe-TPC), with the goal of observing the  $0\nu\beta\beta$  decay of the Xe-136 isotope. The collaboration is in the process of deploying NEXT-100, a detector filled with around 100 kg of Xenon, and is actively developing its ton-scale successor, NEXT-HD.

DIPC is one of the leading institutions of the collaboration and is looking for a PhD student to join the experiment at this crucial time. The student will directly work on the commissioning, calibration, and data analysis of the NEXT-100 detector and will contribute to the development of the optical barrel-fiber detector for the NEXT-HD experiment. The PhD program will be conducted in partnership between DIPC and UPV/EHU, under the co-supervision of Dr. S.R. Soleti and Dr. F. Monrabal.

Mobility between LSC and Donostia is expected during the program. The student will have the opportunity to travel internationally to visit partner institutions and present their work at international conferences in the field.

The candidate should hold a Master's Degree in Physics. A good level of written and spoken English is also required. Programming skills are a preferred qualification.

**Interested candidates should submit an updated CV and a brief statement of interest to the application email listed above. Reference letters are welcome but not indispensable. The reference of the specific opening to which the candidate is applying should also be stated in the subject line.**

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