



Post-doctoral fellow in experimental nuclear physics

Workplace: LP2i Bordeaux, France

Duration of the contract: 24 months with possibility of a 12-month extension

Expected starting date of the contract: March 2023

Contact: Beatriz Jurado (jurado@cenbg.in2p3.fr)

Context:

This post-doctoral position is funded by the ERC-Advanced grant NECTAR (Nuclear rEaCTions At storage Rings, <https://www.lp2ib.in2p3.fr/nucleaire/nex/erc-nectar/>). The aim of NECTAR is to determine neutron-induced reaction cross sections of radioactive nuclei. These cross sections are essential to understand the synthesis of heavy elements in stars and for applications. However, the difficulties to produce and manipulate the necessary amounts of radioactive nuclei make the direct measurement of such cross sections extremely difficult or even impossible. Surrogate reactions in inverse kinematics represent one of the most promising indirect approaches to determine these cross sections. The goal of NECTAR is to combine for the first time surrogate reactions with the heavy-ion storage rings of the GSI/FAIR facility in Germany, which offer the ideal conditions for the study of this type of reactions.

Objectives:

The candidate will work together with the scientists and the engineers from the LP2iB laboratory (Laboratoire de Physique des deux Infinis de Bordeaux) and GSI/FAIR in the preparation and the realization of our next storage-ring experiments, as well as in the analysis of the measured data. She/He will contribute to designing, mounting and testing different detection systems. She/He will work in the definition and assembly of sophisticated vacuum systems to ensure the compatibility with the ultra-high vacuum conditions of the storage rings. The candidate will also take part in the preparation of the readout electronics and the data acquisition system. Finally, the candidate will participate to the supervision of our PhD, master and undergraduate students.

Skills:

- PhD in experimental nuclear physics or particle physics.
- Experience or strong motivation to work in detector development, vacuum techniques and data acquisition systems.
- Experience with programming languages such as Python and C++, as well as with the ROOT data analysis program.
- Strong interest in nuclear reactions and nuclear fission.
- Good communication skills and a good command of spoken and written English.

Working conditions:

The person recruited will work at the LP2iB, which is a mixed unit composed of staff from the Centre National de Recherche Scientifique (CNRS) and the University of Bordeaux. Frequent travel to GSI in Darmstadt, Germany, is to be foreseen, with stays of several weeks to several months. The working hours are those of LP2iB and GSI, except in exceptional cases, for example during experiments.

Interested candidates should send their application before the 17th January 2023 via this link:

<https://emploi.cnrs.fr/Offres/CDD/UMR5797-JERBAU-059/Default.aspx?lang=EN>