



**Laboratório de Instrumentação e
Física Experimental de Partículas**

LIP Seminar

Thursday, December, 12, 11h30

A new Era in Exotic Nuclear Physics: FAIR

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FAIR, the Facility for Antiprotons and Ion Research, is the major upgrade of the present GSI facility located at the city of Darmstadt, in Germany, and is a unique facility at the forefront of research with radioactive beams in the heart of Europe. In this facility, fundamental questions of the evolution of the universe, the structure of matter and its building blocks will be studied, using radioactive beams with unprecedented intensities allowing the production of very exotic isotopes for the first time. FAIR is built around four pillars: PANDA, CBM, APPA and NUSTAR.

Within NUSTAR (the pillar focusing on fundamental Nuclear Structure, Astrophysics and Reactions), LIP is presently involved in the R3B experiment, which is devoted to the study of Reactions with Relativistic Radioactive Beams. LIP has contributed to both detector developments and data analysis. During the talk I will focus on our contribution towards the R&D of two of the main detectors of the future experimental setup, the electromagnetic calorimeter CALIFA, and the neutron Time of Flight detector NeuLAND. In addition, we have concentrated our efforts in the study of reactions of neutron halo nuclei on protons in inverse kinematics, improving the understanding of reaction mechanisms at relativistic energies and insights of the interaction between nucleons.

Presently, the FAIR-0 Phase constitutes the first series of experiments using the upgraded detector setup, allowing the investigation of unexplored regions of the nuclear chart. I would like to show some of the adventures we are facing in exotic nuclear physics... come and see for yourself.

Local: Auditório do 3Is

LIP, Av. Prof. Gama Pinto, No 2, 1649-003 Lisboa

<https://indico.lip.pt/event/677/>

(Café e bolinhos 30 min antes)

O evento terá transmissão por streaming:

URL: <https://videocast.fcn.pt/live/lip/seminarios> PIN:

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