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INPP Seminar | RProcess experiments at the Radioactive Ion Beam Factory, Sept. 12

Ohio University College of Arts & Sciences

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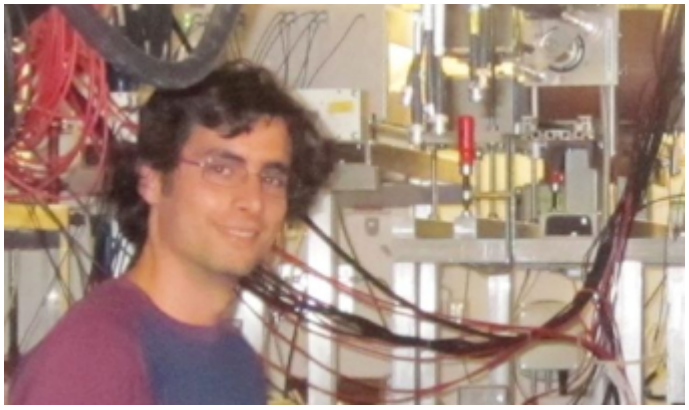
Categories: Events
Tags: Alfredo Estrade, Institute of Nuclear and Particle Physics, NPP Seminar, physics and astronomy events

The Institute of Nuclear and Particle Physics (INPP) presents Alfredo Estrade, of Central Michigan University, on "R-Process experiments at the Radioactive Ion Beam Factory" on Tuesday, Sept. 12, at 4 p.m. in Edwards Accelerator Lab, Roger W. Finlay Conference Room.



Alfredo Estrade

Abstract: One of the main goals of nuclear astrophysics is to resolve the question of how different stellar processes have enriched the chemical composition of the universe since the times of the Big Bang. A challenging open question is that of the synthesis of the heavier elements during the rapid neutron-capture process (rprocess). Models for the r-process suffer from large uncertainties in both their astrophysics and nuclear physics input: the site of the r-process has not been clearly identified, and it involves very unstable neutron-rich isotopes for which there is scant experimental data available. In this talk I will describe the type of experiments that can be performed at a new generation of radioactive ion beam facilities to measure properties of isotopes directly relevant to r-process models.

In particular, I will concentrate on our recent experiments at the Radioactive Ion Beam Factory (RIBF) in RIKEN, in Japan, for measurements of nuclear masses with the time-of-flight technique, and measurements of beta-decay half-lives and betadelayed neutron-emission probabilities with the new BRIKEN detector setup.