

Abstract Submitted
for the DNP06 Meeting of
The American Physical Society

The Notre Dame recoil separator¹ MANOEL COUDER, GEORG P. BERG, JOACHIM GOERRES, LARRY O. LAMM, P.J. LEBLANC, EDWARD STECH, MICHAEL WIESCHER, Department of Physics, University of Notre Dame, Notre Dame, In 46556 — Studies of (p,γ) and (α,γ) reactions at low energies provide crucial information to improve our interpretation of the observed isotopic abundances, to predict the energy production and the time scale of nucleosynthesis processes during the stellar evolution and explosive events. While many radiative captures measurements have been made using various setup in direct kinematics, the very small cross section at astrophysically interesting energy of these reactions and the beam induced background limit the possible range of measurements. Reversing the kinematics and using a recoil separator to reject the beam ions which did not react in the target and to guide the reaction products to a detector is a good solution. Such a device aimed at low energy (α, γ) measurements with stable beams is under development at the University of Notre Dame. In this talk I will present the concept of this new facility that is based on proven principles in existing devices. I will discuss the challenges encountered in low energy measurements and the solutions that we are pursuing.

¹This project is funded by the NSF through grant PHY0216783.

Manoel Couder
Department of Physics, University of Notre Dame, Notre Dame, In 46556

Date submitted: 10 Jul 2006

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