

INSTITUT FÜR ISOTOPENFORSCHUNG UND KERNPHYSIK
DER UNIVERSITÄT WIEN

E I N L A D U N G

zum

S E M I N A R V O R T R A G

von

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Applications of AMS to Nuclear Astrophysics

One of the challenges of experimental nuclear astrophysics is the attempt to obtain accurate determinations of S factor values at the Gamow energy for all the reactions involved in stellar evolution. Due to the extremely low cross sections in the relevant energy regions, one needs to develop reliable methods for extrapolation to low energies. These in turn imply very efficient and selective detection apparatuses allowing to extend cross section measurements on a wide interval. Recoil mass spectrometers (RMS) have been recognized as a very useful experimental tool to study the nuclear processes taking place in astrophysical environments. In the seminar the pioneering work of the NABONA RMS operating at the TTT-3 tandem accelerator in Naples together with the Naples AMS system will be presented, as well as the results obtained for the measurement of the cross section of the $H(^7\text{Be},\gamma)^8\text{B}$ reaction. The second-generation RMS ERNA, installed at the Dynamitron Tandem Laboratory of the Ruhr Universität in Bochum, and the peculiarities of the $^4\text{He}(^{12}\text{C},\gamma)^{16}\text{O}$ reaction which required the upgrading of the RMS features to match the experimental conditions, will then be discussed.

Donnerstag, 6. Juni 2002, 16:30 Uhr

**1090 Wien, Währingerstr. 17, "Kavalierstrakt",
1. Stock, Seminarraum von VERA**

P. Hille

W. Kutschera