

INSTITUT FÜR ISOTOPENFORSCHUNG UND KERNPHYSIK
DER UNIVERSITÄT WIEN

E I N L A D U N G

zum

I N S T I T U T S S E M I N A R

von

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Concepts and Sites for the Astrophysical p-Process

The p-process has been identified as the origin of the so-called p-nuclei, the most neutron deficient stable isotopes in the mass range above $A=60$. The p-process is described as a sequence of photo-dissociation driven processes in high temperature stellar environments, typically associated with the core collapse supernova shock front. Model descriptions of p-process nucleosynthesis exhibit large deficiencies to p-nuclei abundance observations in the mass range $A=90-100$. It has been argued that these discrepancies are due to deficiencies in our understanding of the p-process seed abundance distributions, and/or in our understanding of the associated nuclear reaction rates which nearly exclusively rely on statistical model predictions. Alternatively, different production sites or mechanisms have been envisioned to compensate for these deficiencies. Presently discussed possibilities are the rp-process in X-ray bursts or the v-process in core collapse supernovae, which more recently was complemented with the possibility of a new nucleosynthesis scenario, the vp-process. In this talk I will summarize the present state of debate and outline the range of problems associated with our present picture of the p-process. I will discuss the nuclear physics associated short-comings in the p-process data and the need for refined p-process experiments. Finally I will summarize the p-process alternative sites, which are presently being debated.

Montag, 17. Juli 2006, 11:00 Uhr

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

R. Golser

W. Kutschera