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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Nuclear Aspects of Nucleosynthesis in Massive Stars

Massive stars with more than 8 solar masses not only produce the life-elements Carbon and Oxygen during their hydrostatic burning phases but also they are thought to be responsible for about half of the intermediate and heavy nuclides beyond Iron, created and released in Type II Supernova explosions at the end of their stellar evolution. Nuclear physics is an important ingredient in the modeling of astrophysical scenarios, determining stellar evolution as well as nucleosynthesis. Due to the short halflife of many important nuclei, the weakness of neutrino interactions, and the encountered extreme matter conditions, theoretical predictions of nuclear properties and reaction cross sections of weak and strong interactions are indispensible. I will give an overview of the relevant nuclear physics in the life of a massive star, covering selected reactions in quiescent burning phases as well as current ideas on explosive nucleosynthesis, including neutrino nucleosynthesis. Some of the major problems in predicting the required astrophysical reaction rates are addressed.

Donnerstag, 13. Juli 2006, 16:30 Uhr

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

R. Golser W. Kutschera