TECHNISCHE UNIVERSITÄT DRESDEN

Bereich Mathematik und Naturwissenschaften Fakultät Physik

PHYSIKALISCHES KOLLOQUIUM

Vortrag: **Prof. Daniel Bemmerer**
Helmholtz-Zentrum Dresden-Rossendorf (HZDR)

Thema: **The quest for the origin of the chemical elements**
(Antrittsvorlesung)

Zeit und Ort: Dienstag, 11.10.2022, 16:40 Uhr - Hybride Veranstaltung
Vortrag vor Ort in REC/C213
Online Teilnahme möglich:
Zoom-Meeting: Meeting-ID: 631 3817 8900 / Kenncode: PK-WiSe22
https://tu-dresden.zoom.us/j/63138178900?pwd=RVVZM3N4azdmNmVJQ2RWUTZ0TkhXdz09

Leitung: Dekan Prof. Carsten Timm

Kurzfassung: The field of nuclear astrophysics is situated at the intersection between astrophysics, astronomy, and nuclear physics. It aims to understand how the chemical elements making up our world have been made. To this end, laboratory experiments are conducted to obtain precise input needed for the modelling of astrophysical sites. Prominent examples include the sun, an important cross-check for all stellar models, the Big Bang, and recently also the nuclear processes accompanying neutron star mergers. Due to the repulsive Coulomb barrier, nuclear reaction experiments relevant for astrophysics face ultra-low signal rates. Hence the need for ultra-low background conditions. Such conditions are provided at the Felsenkeller 5 MV underground ion accelerator laboratory in Dresden, jointly inaugurated in 2019 by TU Dresden and HZDR. The talk will review the physics motivation of this laboratory, recent progress made there and elsewhere, and give an outlook on future developments in the field.

Biographie: Daniel Bemmerer obtained his PhD (summa cum laude) in 2004 at TU Berlin under Peter Heide. From 2004-2006 Daniel was a postdoc in Padua / Italy. Since 2006, Daniel works at HZDR. Jointly with Kai Zuber, Daniel developed, promoted and inaugurated the Felsenkeller underground lab for nuclear astrophysics. Daniel obtained his habilitation at TU Dresden in 2012 under Eckart Grosse and was named Honorarprofessor für Nukleare Astrophysik in 2022. He runs the ChETEC-INFRA EU project for nuclear astrophysics and is an ordinary member of NuPECC, the Nuclear Physics European Collaboration Committee.