

PHYSICAL COLLOQUIUM

INVITATION

ONLINE-KOLLOQUIUM ONLY

Monday, 24.04.2024, 4.15 p.m., per
video conference: <https://meeting.uol.de/b/anj-2vc-j6s-fwe>

speaks

Prof. emer. Friedrich-Karl Thielemann
University of Basel and
GSI Helmholtz Center for Heavy Ion Research, Darmstadt

about

"The Cosmic Origin of the Elements"

What is the origin of the oxygen which we breath, the hydrogen and oxygen in form of water in rivers and oceans, the carbon in all organic compounds, the silicon in electronic hardware, the calcium in our bones, the iron in steel, silver and gold in jewels, the rare earths utilized e.g. in magnets or lasers, lead or lithium in batteries, and also of naturally occurring uranium and plutonium?

The answer lies in the skies. Astrophysical environments from the big bang to stars and stellar explosions are the cauldrons where all these elements are made. The understanding of the nucleosynthesis processes responsible for their production combine nuclear physics input and environment conditions like temperature and density, astrophysical models of the early universe as well as stars and stellar explosions in single and binary stellar systems, like core-collapse supernovae, black hole formation and hypernovae, novae, X-ray bursts, type Ia supernovae, neutron star and neutron star-black hole mergers.

As a function of galactic evolution time these events determine the composition of the evolving interstellar medium, requiring progress in this quite interdisciplinary field from nuclear physics to astronomical observations.

All interested persons are cordially invited.

Prof. Dr. Jutta Kunz-Drolshagen