



Physikalisches Kolloquium

Thursday, 16.11.2023, 16:15, HS 100

Reception with coffee & cookies 16:00

(For university staff: please bring your own cup for sustainability reasons)

Dr. habil. Alexey Potapov, Max Planck Institute for Astronomy and,
Friedrich Schiller University, Jena:

Laboratory Astrophysics and Solid-state Astrochemistry

Abstract

Laboratory astrophysics bridges studies of atomic and molecular species in interstellar and circumstellar media and planetary atmospheres conducted through astronomical observations, and studies of these species or their analogues that we can create in the laboratory and probe *in situ*. Many laboratory experiments are devoted to studies of solid-state or surface reactions that lead to a greater complexity (comparing to the gas phase) of molecular species. Complex organic and prebiotic molecules can be formed through surface reaction pathways linking astrophysics/astrochemistry with the big scientific question – the origin of Life on Earth.

In my talk, I will provide a brief introduction to laboratory astrophysics and to cosmic surfaces, will present a new view of cosmic dust grains, and will discuss results of experiments on the catalytic formation of molecules thereon.

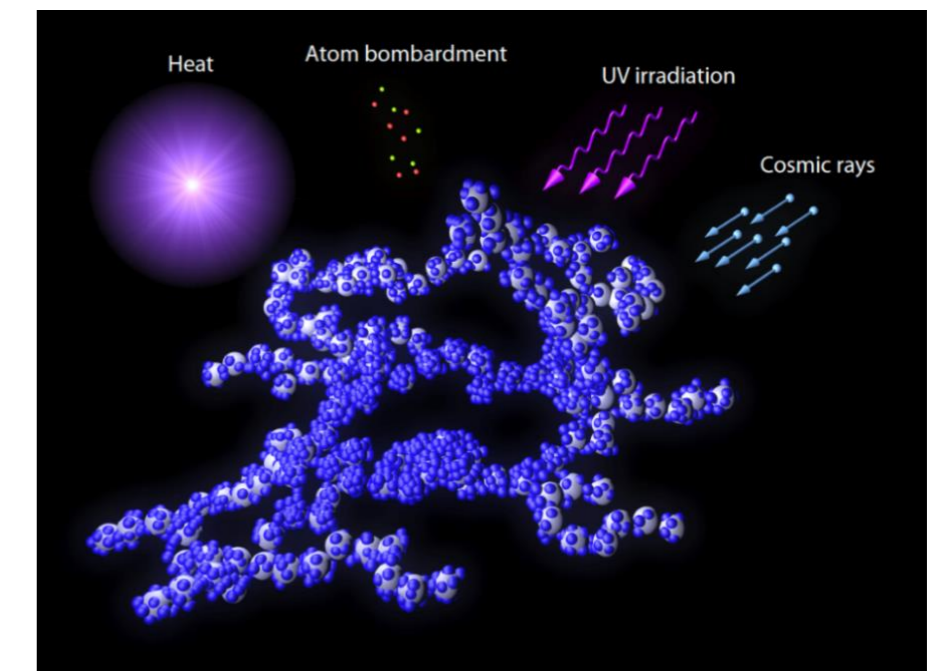


Photo: Schematic figure showing dust grains (in grey) mixed with ice molecules (in blue) and the main sources of their processing in astrophysical environments (from Potapov et al., *Phys. Rev. Lett.*, 2020, **124**, 221103).

All of you interested in physics are cordially invited!