LMU LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN

ARNOLD SOMMERFELD CENTER FOR THEORETICAL PHYSICS

Sommerfeld Theory Colloquium

Prof. Dmitri Semikoz

APC Paris

Mystery of highest energy particles in the Universe

Ultra-High-Energy Cosmic Rays (UHECRs) are particles with energies up to $3 \times 10^{20} eV$, originating from unknown sources and producing extensive air showers in Earth's atmosphere. In this talk, I will review the current status of UHECR observations, including the energy spectrum, mass composition, and anisotropy in their arrival directions. I will highlight how the knowledge of the Galactic Magnetic Field (GMF) of the Milky Way is crucial for identifying UHECR sources. Additionally, I will review recent models of the GMF. Finally, I will discuss the propagation of UHECRs from their sources through both intergalactic and galactic magnetic fields, and I will explore the prospects for future source identification.

Wednesday, 21 May 2025, 16:15h, Room A348, Theresienstr. 37/III

Prof. Slava Mukhanov