

PHYSIKALISCHES KOLLOQUIUM

Sommersemester 2025

Das Kolloquium findet (soweit nicht anders angegeben) **jeweils montags um 14:15 Uhr in Präsenz im Röntgen-Hörsaal** des Physikalischen Instituts, Hubland Campus Süd, Universität Würzburg **und online via Zoom** statt.

Zugangsdaten siehe <https://www.physik.uni-wuerzburg.de/aktuelles/veranstaltungen-aus-der-physik/physikalisches-kolloquium/>

05.05.2025

Prof. Dr. Julia Harz
Universität Mainz, Institut für Physik, WA THEP

Pushing the Limits of Dark Matter: From the Cosmos to the Lab

Abstract

The search for dark matter, which constitutes approximately 27% of the Universe's present-day energy density, remains one of the central challenges in modern physics. Despite compelling evidence from astrophysical and cosmological observations, its particle nature has yet to be identified through direct detection. In this talk, I will provide an overview of the dark matter landscape and the current status of experimental search efforts. I will discuss the importance of recent methodological advances in the theoretical prediction of the dark matter abundance, with particular emphasis on the role of non-perturbative effects and thermal corrections, which are essential for the accurate interpretation of experimental results. Finally, I will outline innovative approaches to testing dark matter scenarios, highlighting the complementarity of early-Universe cosmology and terrestrial experiments.

Für die Dozentinnen bzw. Dozenten der Fakultät

Prof. Dr. Hankiewicz, Prof. Dr. Hinkov, Dr. Meyer, Dr. Feichtner, Hr. Baumbach