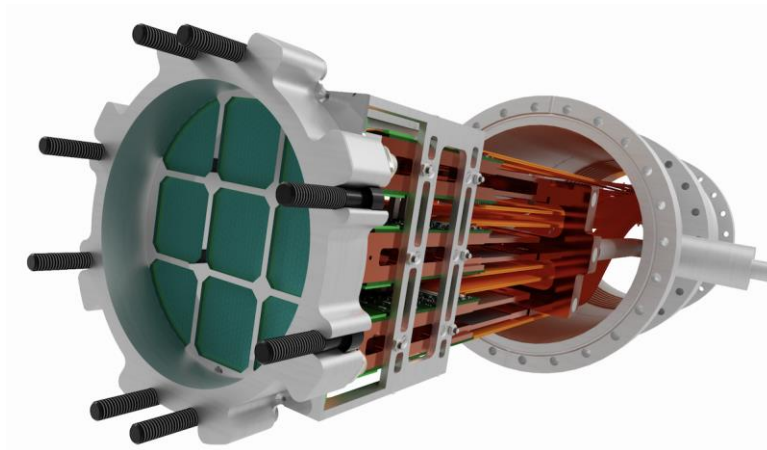


Einladung zum Physikalischen Kolloquium

14.11.2025 **Susanne Mertens, Max Planck Institut für Kernphysik, Heidelberg**
»Searching for Sterile Neutrinos with KATRIN«

Einführung: M. Klute

Abstract: Despite major advances over recent decades, neutrinos still present us with fundamental open questions: Are they their own antiparticles? What is their absolute mass scale? And do additional, so-called sterile neutrino states exist beyond the three known flavors? The KATRIN experiment, primarily designed to probe the absolute neutrino mass via high-precision spectroscopy of tritium β -decay, also offers sensitivity to sterile neutrinos in the eV- to keV mass range. In this talk, I will present recent KATRIN results on the search for eV-scale sterile neutrinos, providing highly complementary insights to oscillation-based searches. I will also introduce the upcoming KATRIN measurement phase featuring a novel focal-plane detector, which enables full β -decay spectrum measurements and extends the search to keV-scale sterile neutrinos, which are possible candidates for dark matter.



Der Vortrag findet **am Freitag, den 14. November 2025 um 15:45 Uhr** im **Otto-Lehmann-Hörsaal**, Physik-Flachbau (Geb. 30.22), KIT-Campus Süd statt.