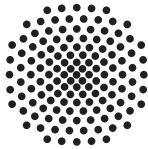


Stuttgarter Physikalisches Kolloquium

Max-Planck-Institut für Festkörperforschung
Fachbereich Physik, Universität Stuttgart

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Hybrid
Name / email address required

Dienstag, 7. November 2023

16.15 Uhr

Lecture Hall 2D5

Max-Planck-Institut für Festkörperforschung, Heisenbergstraße 1, 70569 Stuttgart-Büsnau

Macroscopic Quantum Phenomena in Spintronics

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Abstract

Traditionally, spintronics covers efforts to generate, detect, control, and utilize itinerant electron spin currents in metals and semiconductors. However, particularly in magnetic insulators, various spin excitations related to the magnetic order parameters offer new ways to control electronic devices. We will discuss recent developments where the spin excitations induce macroscopic quantum phenomena in spintronics. Topics outlined will be Bose-Einstein condensation of magnons, spin superfluidity, magnon-mediated superconductivity, squeezing, and exciton condensation.