



# IFMP Seminar

**Date** Monday, July 13, 2026, at 14:50

**REC/C213**

**Zoom:** *Not available*

**Speaker** **Sushmita Chandra**

*MPI-CPfS*

**Title** **Topology and Quantum Transport in Emerging 2D Materials**

**Abstract** In this talk, I will present our ongoing research on quantum transport in emerging two-dimensional (2D) materials beyond graphene. I will first introduce the MISFIT layered compounds, a unique class of natural van der Waals heterostructures, and discuss our recent investigations into their structural, electronic, and transport properties. In the second part, I will demonstrate how focused ion beam (FIB) can be employed to study the out-of-plane transport in these 2D materials. As a case study, I will demonstrate how we can correlate the observation of quantum oscillations with periodic lattice modulations in the FIB-microstructured devices of a topological nodal-line semimetal,  $\text{SnTaS}_2$ . I will also present our recent efforts on ionic liquid gating of 2D insulators. Lastly, I will conclude by introducing our newly established 2D materials fabrication and low-temperature quantum transport measurement facility at MPI CPfS.

Host: J. Geck