



IFMP Seminar

Date Monday, May 12, 2025, at 14:50

REC/C213

Zoom: 688 4227 2214, Passcode: IFMP2024-5

Speaker **Nina Stilkerich**

IFMP, TU Dresden

Title **Uniaxial Pressure Tuning of Magnetic Phases in PdCrO₂**

Abstract Uniaxial pressure can be used to tune the competing interaction energies of frustrated magnets. PdCrO₂ is such a frustrated antiferromagnet below a Néel temperature of 37.5 K. A previous study discovered a double-to-single-**q** transition under a uniaxial compression of -0.4 GPa, and predicts a Néel transition at -1 GPa [1]. In this talk, I present stress-strain measurements as well as XRD and neutron diffraction measurements on PdCrO₂ under uniaxial pressure. Thereby, not only the presence of the double-to-single-**q** transition is confirmed, but a new phase is revealed. The phase is characterized by a 30% increase of the Young's modulus compared to the unstressed lattice, as well as a change of the magnetic structure. The magnetic structure of the new phase at ≈ -1 GPa is, other than predicted, not a Néel-type magnetic order.

[1] D. Sun *et al.*, New J. Phys. **23**, 123050 (2021).

Host: J. Geck