



# IFMP Seminar

**Date** Monday, January 29, 2024, at 14:50

**REC/C213**

**Speaker** **Laura Teresa Corredor Bohórquez**

*IFW-Dresden*

**Title**  **$\text{Na}_3\text{Co}_2\text{SbO}_6$ : Exploring the proximity to a Kitaev quantum spin liquid phase**

**Abstract** The Kitaev model has become extremely popular in the field of quantum spin liquid (QSL) materials, as it is an exactly solvable model for the honeycomb lattice that possesses the quantum spin liquid state as a possible ground state for a material with the right balance of exchange interactions. However, the Kitaev spin liquid remains until now elusive, as this state is fragile and destroyed by perturbations, such as small admixture of a conventional Heisenberg coupling caused by direct overlap of the  $d$  orbitals and long-range couplings, unavoidable in weakly localized  $5d$ - and  $4d$ -electron systems with the spatially extended  $d$  wave functions. As an alternative,  $3d$  systems with more compact  $d$  orbitals have been proposed, among them, several cobaltates.

In this talk, I will present recent results on high-quality single crystals of the QSL candidate  $\text{Na}_3\text{Co}_2\text{SbO}_6$ , characterized by thermodynamic methods. The large anisotropy of this antiferromagnetic material and the rich variety of field-induced phases, together with theoretical predictions pointing to a possible strain/pressure-driven Kitaev spin liquid phase, make it a stimulating playground for the study of Kitaev physics.

Host: D. Peets