

Solid State Physics Seminar

12.12. 2025

Speaker: Dr Marta Borysiewicz

Title: MnTe as a prototypic altermagnet

Abstract:

Hexagonal MnTe is an antiferromagnetic semiconductor, known from the 1960's [1-7]. Being recently classified as an altermagnet [8], it experiences a renaissance of scientific interest, e.g. [9-13]. One of the reasons it attracts so much attention is that MnTe is one of the few conducting altermagnets, opening the possibilities to probe the relations between its (antiferro)magnetic state and transport properties, key aspects for spin-based memories and spintronic applications.

In this seminar I will discuss the properties of bulk MnTe crystals. I will cover the investigations of the resistivity tensor (revealing anomalous Hall effect), combined with magnetization studies (revealing weak ferromagnetism). Explanations of these effects are proposed, basing on Dzyaloshinskii-Moriya interaction and non-vanishing Berry curvature. The role of non-relativistic effects (underlying altermagnetism) and relativistic ones will be discussed.

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