



IFMP Seminar

Date Tuesday, January 24, 2023, at 14:50

REC/C213

BigBlueButton:

<https://selfservice.zih.tu-dresden.de/l/link.php?m=188426&p=6261bff8> (TUD)

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Speaker **Filip Křížek**

IBM Zürich, IoP Prague

Title **Investigating Antiferromagnetic Properties of CuMnAs by Transmission Electron Microscopy**

Abstract High-quality thin films of tetragonal CuMnAs [1] were recently implemented in novel spintronic devices. These rely on different phenomena, for example Néel vector reorientation *via* spin-orbit coupling [2] or thermal quenching into high-resistivity states [3]. I will present the results of our attempts to use transmission electron microscopy to understand the magnetic structure of CuMnAs on the atomic scale [4]. These experiments help us not only to explain the physical mechanisms behind interesting functionalities of CuMnAs devices [5], but also get a better understanding of the crystalline/magnetic structure interplay in antiferromagnets.

[1] Krizek *et al.*, Phys. Rev. Mater. **4** (2020).

[2] Wadley *et al.*, Science **351** (2016).

[3] Kasper *et al.*, Nature Electronics **4** (2020).

[4] Krizek *et al.*, Sci. Adv. **8** (2022).

[5] Zubáč *et al.*, Phys. Rev. B **104** (2021).

Host: H. Reichlova