

International workshop - Magnetism and Phonons driven Physics in 2D and 3D systems

within the CZ-SK *Influence of thermoelectrical effects on spin-orbit torques in 2D van der Waals materials* projects
No. LUASK22099 supported by Ministry of Education, Youth, and Sports of the Czech Republic
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(June 5-6th 2025)

June 5th - afternoon schedule:

13:55 D. Legut (IT4I) - Introduction

14:00 D. Legut (IT4I) - Magnetoelastic effects on sound velocity

14:30 M. Gmitra (UPJS) - Self-induced spin-orbit torque in graphene on 1T-TaS₂

15:00 P. Piekarczyk (INP) - Dynamical properties studied by pump-probe and ab initio methods

15:30 J. Šebesta (IT4I) - Photo-induced dynamics of Weyl-nodes

16:00 J. Mnich (UPJS) - Charge to spin conversion in graphene-based heterostructures

16:30 S. Pastukh (INP) - From Two Layers to Bulk: Thermal Transport in Graphene/h-BN Heterostructures

17:00 I. Korniienko (IT4I) - Computational study of elastic waves generated by ultrafast demagnetization in fcc Ni

June 6th - morning schedule:

09:00 S. Arapan (IT4I) - A pathway to predict new materials with DFT: the case of C36 Laves phase in Co-Fe-Ta system (online)

09:30 P. Jochym (INP) - High Efficiency Configuration Space Sampling (online)

10:00 T. Moško (UPJS) - Magnetic and electronic properties of monolayer α -NbSi₂N₄

10:30 L. Cigarini (IT4I) - Impact of defective sites on the thermoelectric properties of scandium nitride: a microscopic model of electronic transport

11:00 O. Pastukh (INP) - Study of the interaction of magnetic molecules with ferromagnetic waveguide by spin wave propagation

11:30 Jozef Haniš (UPJS) - Quasiparticle interference in NbSe₂ monolayer

Lunch: 12:00-13:30

June 6th - afternoon schedule:

13:30 D. Legut - Overview of the Quantum computer installation at IT4Innovations (LUMI-Q)

Panel discussion: 14:00-15:00 Devoted to the progress, finalization of project results and update of the dissemination plan and strategies how to make it more synergic for both teams final outputs.