



ANNOUNCEMENT - TALK

Title: Chiral phononics beyond circular polarization

Abstract:

Chiral phononics is an emerging field that utilizes the angular momentum of circularly polarized lattice vibrations to manipulate the properties of quantum materials. This has led to intriguing discoveries of novel physical phenomena, including the generation of atomistic tesla-scale magnetic fields that promise unprecedented control of magnetic order. In this talk, I will provide an introduction to the field and then present predictions of phonon chirality and angular momentum beyond the conventional understanding. Specifically, I will show how phonon magnetic moments can be generated without circular atomic motion and even without angular momentum, and how multicolor phonons can be used to generate staggered magnetic fields. I will further show how nonlinearly driven phonons can induce geometric chirality in materials.

Date/Time: TUESDAY, MAY 13 at 14:00

Location: MPSD Building 900, EG 136

Speaker: DOMINIK MAXIMILIAN JURASCHEK (Department
of Applied Physics and Science Education
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