UNIVERSITÄT BIELEFELD

Fakultät für Physik

Physikalisches Kolloquium
Antrittsvorlesung

PD Dr. Timo Kuschel

Universität Bielefeld

Spin currents in magnetic nanostructures

The transport of spin angular momentum through solid state is discussed as future information carrier system and can be supported by different (quasi) particles such as electrons, magnons, phonons, etc. Several means have been developed in the last decade(s) to generate, manipulate and detect spin currents in nanostructures. I will present some of these techniques and discuss the important properties of the system for optimal spin current transport. I will further emphasize the potential of hybridized spin currents which evolve when different (quasi) particles are coupled to each other. In addition, hybridization of coherent and incoherent spin currents leads to interesting physical phenomena. Finally, I will show how advanced synchrotron techniques support the search for optimal spin transport conditions.

Tuesday, June 13, 2023, 2:15 p.m.

H6