PHYSIKALISCHES KOLLOQUIUM

Sommersemester 2021

Das Kolloquium findet (soweit unten nicht anders angegeben) jeweils montags **jeweils montags um 17:15 Uhr online via Zoom** statt.
(Der jeweilige Link wird noch zur Verfügung gestellt.).

17. Mai 2021

Prof. Dr. Amir Yacobi
Harvard University, Department of Physics

**Magnons as probes of strongly correlated physics**

**Abstract**

Spin waves also known as Magnons are collective neutral excitations of magnetic systems. Such spin waves most commonly behave as bosons and could potentially form exotic states such as spin superfluids. Additionally, since they are chargeless they can provide unique insights into the underlying properties and excitations of insulating magnetic systems. An attractive setting for studying long-lived spin-wave physics is the quantum Hall effect, that forms spontaneously in clean two-dimensional electron systems at low temperature and in a perpendicular magnetic field. In fact quantum Hall systems are one of the few examples of an electrically controlled magnetic system that can be tuned from ferromagnetic to antiferromagnetic simply by changing the density of carriers in the system. In this talk I will review some of our recent experiments that explore the propagation of magnons in a variety of quantum phases as well as describe a new scattering platform that uses magnons as the scattered particles to explore the underlying magnetic properties of mesoscopic targets.

Für die Dozentinnen bzw. Dozenten der Fakultät

Prof. Dr. Hankiewicz, Prof Dr. Höfling, PD. Dr. Meyer, Prof Dr. Sing und Hr. Frerichs