

CONDENSED MATTER THEORY SEMINAR

Subject: **The universal shear conductivity of spinon and electron Fermi surfaces**

Speaker: **Dr. Inti Sodemann (MPI PKS)**

Date & time: **Friday, May 28th, 2021 at 3:15 p.m.**

Venue: **Online Seminar**

We demonstrate a remarkable universality of the shear electrical conductivity of spinon Fermi surface states and metals in 2d, namely that this response function is purely controlled by the geometric shape of their Fermi surfaces and not influenced by details of interactions or dispersions, in its long wave-length and quasi-static limit. We also show that in this limit the magnetic noise emanating from these spin liquids is identical to a metal, and only depends on the length of their Fermi surface perimeter, challenging the widespread view of these states as electrical insulators, and paving the way for a new spectroscopic technique based on NV center magnetometry to detect these elusive states and to probe the Fermi surface geometry of correlated metals.