RUHR-UNIVERSITÄT BOCHUM

RUB

PHYSIKALISCHES KOLLOQUIUM

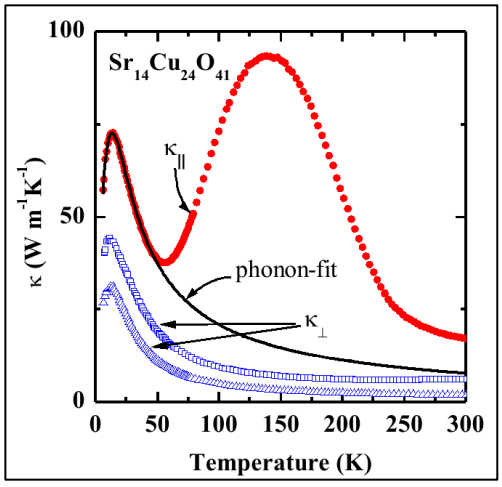
WINTERSEMESTER 2023/24

Montag, 27.11, 12 Uhr c.t.

TRANSPORT AND SCATTERING IN EXOTIC QUANTUM MATTER

Christian Hess, Uni Wuppertal

Key aspects of today's research on quantum matter are exotic ground states which, for example, feature fractionalized or topological excitations. In this talk I will provide an overview on pertinent research activities of the experimental solid state physics group at the University of Wuppertal with a focus on the transport properties of low-dimensional and frustrated quantum magnets. Typically, these system possess strongly quantum disordered ground states, and yet well-defined emergent fractionalized excitations with peculiar properties. I will first introduce the nature of such fractionalized excitations - the spinons - in 1D Heisenberg chains and demonstrate the ballistic nature of their heat transport.



Afterwards, ongoing research on the thermal Hall effect in Kitaev materials which are candidates for Majorana fermion and vison excitations as well as the ultra-low-temperature transport of kagome materials will be discussed

Die Einführung erfolgt durch Anna Böhmer

Die Fakultät lädt alle Interessierten herzlich ein. Die Veranstaltung findet im Hörsaal HZO 20 statt.

Physik und Astronomie
from matter to materials