

Plenary Talk

PV VI Tue 9:00 Audimax 1

Correlated electrons with knots — ●SILKE BÜHLER-PASCHEN —
TU Wien, Vienna, Austria

Strongly correlated quantum materials are fertile ground for new physics and offer numerous opportunities for discovery. To explore how the landscape of correlated quantum phases is enriched in the presence of nontrivial electronic topology, characterized by topological

knots (or nodes) in momentum space, represents a new frontier. After a general discussion of this background, I will present our recent results on a Weyl semimetal driven by strong correlations, and highlight its giant topological responses as well as the ease to achieve genuine topology control. I will close by discussing the prospect of finding further correlation-driven topological phases and their potential for quantum applications.