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Stuttgarter Physikalisches Kolloquium

Max-Planck-Institut für Festkörperforschung
Fachbereich Physik, Universität Stuttgart

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Hybrid

Login data will be announced by e-mail and on the colloquium webpage.

Dienstag, 13. Juni 2023 | **16.15 Uhr** | **Lecture Hall 2D5**

Max-Planck-Institut für Festkörperforschung, Heisenbergstraße 1, 70569 Stuttgart-Büsnau

Dynamical Fingerprints of Quantum Phases of Matter

Frank Pollmann
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Abstract

Condensed matter is found in a variety of phases, the vast majority of which are characterized in terms of symmetry breaking. For example, magnets spontaneously break time-reversal and spin rotation symmetries. A notable exception was provided by the discovery of the (fractional) quantum Hall effect, which exhibits a new kind of topological order not associated with any symmetry breaking. Quantum spin liquids, which were originally proposed by P.W. Anderson in 1973, represent another prominent example. Characterizing features of such exotic phases include non-local entanglement and the emergence of fractionalized excitations. The experimental identification of such quantum spin liquid remains a great challenge. In this talk, I will introduce theoretical frameworks to characterize spin liquids and discuss dynamical signatures that are useful to detect them in experiments.