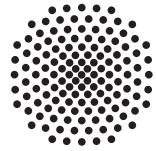


# Stuttgarter Physikalisches Kolloquium

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

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Hybrid

Login data will be announced by e-mail

Dienstag, 7. Mai 2024

16.15 Uhr

Lecture Hall 2D5

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

## The Ising model at 100 – alive and quantum

**Felix von Oppen**

Freie Universität Berlin

### Abstract

This year marks the centennial of the thesis in which Ernst Ising introduced the model that carries his name. Its quantum version, the transverse field (or quantum) Ising model, is not only important for solving the classical Ising model. It is also pervading large swaths of modern quantum condensed matter physics, quantum information theory, and beyond. It is the drosophila for symmetry-breaking quantum phase transitions in its spin incarnation, for topological quantum phase transitions and Majorana zero modes in its fermionic form, for lattice gauge theory and topological quantum error correction in its dual formulation, and for Majorana p modes and discrete time crystals as a Floquet model. In this talk, I will review some of these connections and developments, guided by our analysis of a recent experiment on the random-field Floquet quantum Ising model using a superconducting quantum information processor.