

# Physikalisches Kolloquium

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»Topological Insulators and Superconductors«

*Einführung: J. Schmalian*

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Topological insulators and superconductors are new quantum states of matter that are characterized by nontrivial topological structures of the Hilbert space. Recently, they attract a lot of attention because of the appearance of exotic quasiparticles such as spin-momentum-locked Dirac fermions or Majorana fermions on their edge/surface, which hold promise for various novel applications. In particular, localized zero-energy Majorana mode is expected to obey non-Abelian statistics and enable topological quantum computing. In this talk, I will introduce the basics of those materials and present some of the key contributions we have made in this new frontier, such as the synthesis of bulk-insulating topological insulators, discovery of topological crystalline insulator, and the discovery of nematic topological superconductor.

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**Freitag, 20.10.2017, 15:45 Uhr,**

**KIT, Campus Süd,**

**Otto-Lehmann-Hörsaal, Physik-Flachbau (Geb. 30.22).**

**Anschließend Nachsitzung im Gastdozentenhaus „Heinrich Hertz“**