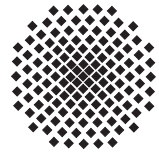


Stuttgarter Physikalisches Kolloquium

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

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Dienstag, 10. April 2018

17.15 Uhr

Hörsaal 2 D5

Stuttgarter Max-Planck-Institute, Heisenbergstraße 1, 70569 Stuttgart-Büsnau

Fractionalization in multi-orbital systems

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Abstract

Low-dimensional quantum systems with both strong quantum fluctuations and substantial interactions can host fractionalization, where the electron, an elementary particle, behaves as if it were split into parts with fractional charges or into a charge separated from its spin. More recently, spin-charge separation, which arises in one-dimensional systems, has been complemented by the idea of spin-orbit separation. I will present an overview over fractionalization, comparing spin-charge and spin-orbit scenarios and will also discuss orbital excitations as an alternative way to investigate the physics of charge carriers in Mott insulators.