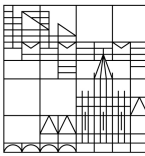


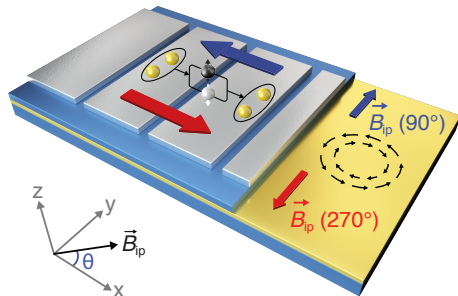
Physikalisches Kolloquium

Universität
Konstanz



Prof. Dr. Christoph Strunk
Universität Regensburg

Di 04.05.21
15:15 Uhr
Online-Veranstaltung



Of spins & orbits: induced superconductivity in the presence of strong spin-orbit interaction

Spin-orbit interaction preserves time-reversal symmetry and is thus fully compatible with superconductivity. However, it can compete with an external magnetic field or an exchange field. This competition leads to interesting magneto-electric effects: most prominently to a *supercurrent diode* effect. After an introduction into non-reciprocal transport, I will report on arrays of ballistic Josephson junctions, based on InAs quantum wells. An in-plane magnetic field perpendicular to the current flow gives rise to peculiar non-reciprocal distortions of the current-phase relation of the junctions that can be detected in the inductive response of the junction arrays. Nonreciprocal Josephson junctions have the potential for applications in novel circuit elements for superconducting quantum electronics.

