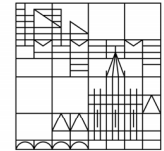


Physikalisches Kolloquium

Universität
Konstanz



Di 29.11.22
15:15 Uhr
R 513

Im Anschluss Kaffee/Tee



Prof. Dr. Jacob Linder
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Long-ranged spin-polarized superconductivity in antiferromagnets

A synergy can arise between ferromagnets and superconductors due to the appearance of spin-polarized superconductivity and the unusual spin-dependent properties of quasiparticles in such systems. Whereas the interplay between ferromagnetism and superconductivity has been well-studied in the context of spintronics, much remains to be understood about antiferromagnet/superconductor structures. For instance, a puzzling experimental observation made by several groups is that antiferromagnets, despite the absence of a net spin-polarization, can suppress superconductivity much more than normal metals. In this talk, I will present recent progress on the understanding of the spin-physics that emerges in structures comprised of antiferromagnets and superconductors. I will show how impurity scattering in antiferromagnetic metals act like effective magnetic impurities, which finally explains the abovementioned experimental results. Surprisingly, I will also show that long-ranged spin-polarized superconductivity can arise in antiferromagnets, which opens up entirely new material combinations to be utilized in superconducting spintronics.

