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**Quantum critical Kondo screening in graphene**

MATTHIAS VOJTA, Technische Universitaet Dresden

Magnetic impurities in neutral graphene provide a realization of the pseudogap Kondo model, which displays a quantum phase transition between phases with screened and unscreened impurity moment. In this talk, I discuss the physics of the pseudogap Kondo model with finite chemical potential $\mu$. While carrier doping restores conventional Kondo screening at lowest energies, properties of the quantum critical fixed point turn out to influence the behavior over a large parameter range. Most importantly, the Kondo temperature $T_K$ shows an extreme asymmetry between electron and hole doping. At criticality, depending on the sign of $\mu$, $T_K$ follows either the scaling prediction $T_K \propto |\mu|$ with a universal prefactor, or $T_K \propto |\mu|^x$ with $x \approx 2.6$. This asymmetry between electron and hole doping extends well outside the quantum critical regime and also implies a qualitative difference in the shape of the tunneling spectra for both signs of $\mu$. Finally, the considerations are extended to the two-channel Kondo model where non-Fermi liquid behavior emerges at lowest energies.