EINLADUNG zum IFP-SEMINAR

Multiband Dual Fermion Approach
Daniel Hirschmeier
University of Hamburg, Germany

Host: Oleg Janson

Termin: Dienstag, 5. Dezember 2017, 14:00 Uhr

Ort: Institut für Festkörperphysik, TU Wien

             Wiedner Hauptstraße 8-10, 1040 Wien

             Seminarraum DC rot 07 (roter Bereich, 7. OG)

Förderer: FWF M 2050-N34 „Honeycomb"

I present an extension of the Dual Fermion Approach, a diagrammatic multi-scale method based on Dynamical Mean Field Theory, to Hubbard models on lattices with multiple atoms in the unit cell. Application to the half-filled honeycomb lattice yields an estimate of the critical interaction strength for the quantum phase transition from a paramagnetic semimetal to an antiferromagnetic insulator, in good agreement to other numerical methods. The data imply that, at large interaction strengths, the Hubbard model on the honeycomb lattice behaves like a quantum nonlinear sigma model, while being in a non-Fermi liquid state.