



EINLADUNG zum IFP-SEMINAR

Thema: **Quantum criticality and geometric frustration in the anisotropic Kondo material CeRu_4Sn_6**

VortragendEr: **Wesley Fuhrman**, Institute for Quantum Matter and Department of Physics and Astronomy, The Johns Hopkins University, Baltimore, Maryland, USA

Termin: **Donnerstag, 10. September 2015, 14 Uhr**

Ort: Institut für Festkörperphysik, TU Wien
Wiedner Hauptstraße 8-10, 1040 Wien
Seminarraum FH ROT 07, Freihaus 07. OG (rote Leitfarbe)

Host: Silke Bühler-Paschen

Using inelastic neutron scattering we observed and modeled an anisotropic quasi-elastic magnetic neutron scattering response in CeRu_4Sn_6 . The neutron signal has a broad momentum space distribution which maintains a $1/\delta$ energy profile throughout the Brillouin zone, indicating a lack of order and no characteristic energy scale within the 0.2 meV instrumental energy resolution employed.

We find that the energy integrated scattering intensity is well modeled by a Kondo-Heisenberg Hamiltonian with parameters informed by known physical properties. This supports the interpretation of the tetragonal CeRu_4Sn_6 as an anisotropic or nodal Kondo insulator, markedly different from typical cubic Kondo insulators. The strong frustration within in our model accounts for the especially broad features observed in the scattering and suggests the system harbors strong quantum fluctuations and may be close to both Kondo insulator and quantum critical spin-liquid phases. [