GOETHE UNIVERSITÄT FRANKFURT AM MAIN

Fachbereich Physik
Institut für Theoretische Physik

# SPECIAL CONDENSED MATTER THEORY SEMINAR

Subject: **To have (KONDO effect) and have not: Renormalization and Scaling**

Speaker: **Prof. Eugene Kogan (Bar-Ilan University, Israel)**

Date & time: **Tuesday, February 19th, 2019 at 2:15 p.m.**

Venue: **Seminar room 1.114**

---

We discuss Kondo effect in the framework of a general model, describing a quantum impurity with degenerate energy levels interacting with a gas of itinerant electrons and derive scaling equation for the interaction parameters to the second order for such a model.

The approach is applied to the spin-anisotropic Kondo model generalized for the case of the power law DOS for itinerant electrons. The scaling equation is specified and solved analytically in terms of elliptic functions.

We also introduce spin-anisotropic Coqblin--Schrieffer model, apply the general method to derive scaling equation for that model and integrate the derived equation analytically.

E. Kogan, K. Noda, and S. Yunoki, Spin-anisotropic magnetic impurity in a Fermi gas: Integration of poor man's scaling equations, Phys. Rev. B 95, 165412 (2017).

E. Kogan, Poor man's scaling: anisotropic Kondo and Coqblin--Schrieffer models, J. Phys. Commun. 2, 085001 (2018).