LMU LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN

ARNOLD SOMMERFELD CENTER FOR THEORETICAL PHYSICS

Sommerfeld Theory Colloquium

Prof. Matthias Punk

LMU

Quantum Critical Points in Metals: Non-Fermi Liquids and their Field Theoretical Description

Metals are found frequently in nature and their properties are usually very well described within Landaus Fermi liquid theory. Various strongly correlated materials exhibit strange metallic phases which do not fit into the Fermi-liquid framework, however. The theoretical description of such non-Fermi liquids remains one of the main unsolved problems in condensed matter physics. In this talk I will give an introduction to the problem and show how interesting strongly coupled field theories arise in the low energy description of such states, which are still very poorly understood. I will focus on the paradigmatic problem of a metal coupled to fluctuations of a critical Ising order parameter and discuss unexpected scaling properties at finite temperature.

Wednesday, 8 June 2016, 16:15h, Room A348/349, Theresienstr. 37/III

Prof. J. von Delft