



Festkörper-Kolloquium und Seminar TRR 80

am Donnerstag, 13.12.2012

um 17 h ct

spricht

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im HS 3 im Physik-Department

über das Thema

Quantum Criticality and Strongly Correlated Electrons

Electronic materials exhibit diverse properties, some of which “merely” inspire our curiosity, while others change the way we live our lives. When electronic correlations are strong, the behaviour is even richer but the theoretical description becomes notoriously difficult.

The fundamental question is how the electrons are organized and, in particular, whether there are principles that are universal among the various classes of strongly correlated systems. One such principle, which has come to prominence in recent years, is quantum criticality.

In this talk, I will introduce the basics about quantum criticality including the motivations to study it from correlated-electron settings. I will discuss some of our recent theoretical works, and will in particular focus on issues arising from heavy fermion metals. These include the “beyond-Landau” quantum critical points, as well as emergent magnetic and superconducting phases.