



TRR 80 Seminar

Am Dienstag, den 30. Juni um 16:00 Uhr

spricht

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über das Thema

Signatures of quantum criticality in $FeGa_{3-x}Ge_x$ and $CeTi_{1-x}V_xGe_3$ explored by NMR and NQR

Ferromagnetic quantum criticality (FMQC) have been less explored so far than antiferromagnetic quantum criticality. In several systems lots of attempts by chemical and mechanical pressure have been made to get FMQCP but most of the cases the second order phase transition becomes first order or the system enters into a different phase (Griffiths phase, superconductivity, spiral spin state etc.) before reaching to the critical point which implies avoided FMQC.

From recent magnetization and specific heat measurements on a 3d based $FeGa_3$ (semiconductor) seems to be an ideal candidate to study the evolution of a metallic state and furthermore approaching to a possible ferromagnetic (FM) critical point upon Ge substitution (electron doping) without the considerable effect of disorder, on the contrary in the 4f based metallic ferromagnet $CeTiGe_3$ (with $TC \approx 14$ K), the TC can be suppressed towards zero upon V substitution (electron doping) and $CeVGe_3$ is a well-known antiferromagnet ($TN \approx 6$ K) with a sizable Kondo interaction.

In order to study the evolution of ferromagnetic correlations and the critical fluctuations at the verge of FM ordering in $FeGa_{3-x}Ge_x$ we have employed ^{71}Ga NQR as a zero field microscopic probe, whereas in case of $CeTi_{1-x}V_xGe_3$, ^{51}V NMR have been used. The critical fluctuations can be explained by SCR theory of itinerant ferromagnets in both of the systems. It is found that the critical fluctuations in the systems which is close to the FMQCP in $CeTi_{1-x}V_xGe_3$ can be tuned by magnetic field.

Gäste sind herzlich willkommen!

Der Vortrag findet im Seminarraum S-288 / Institut für Physik, Universität Augsburg statt.

Gastgeberin: Dr. Veronika Fritsch

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