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Titel des Beitrags:
Non-Fermi liquid puzzle of MnSi at high pressure

Abstract:
The variation of the electrical resistivity of MnSi at low temperatures changes abruptly from $T_2$ to $T_{3=2}$ when the weak spin polarization is discontinuously suppressed at a hydrostatic pressure $p_c \approx 14.6$ kbar: The $T_{3=2}$ dependence of the non-polarized state prevails for $p > p_c$ with a prefactor that is weakly pressure dependent and insensitive to sample purity. This contradicts the predictions of a nearly ferromagnetic Fermi liquid for $p > p_c$ anticipated from the weakly ferromagnetic state for $p < p_c$: It highlights a novel aspect of the metallic state for $p > p_c$ which most likely is related to unconventional dynamical properties of the spin density. Here I speculate on mechanisms that may form the basis for a future theoretical framework, e.g. incipient antiferromagnetism of itinerant ferromagnets, quantum instantons, changes of charge screening and quantum interference effects similar to frozen in disorder or related to the chirality of the spin fluctuations.

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