Abstract Submitted
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Evolution of magnetic order and fluctuations in Ni-V close to the disordered ferromagnetic quantum critical point[1] ALMUT SCHROEDER, RUIZHE WANG, S. UBAID-KASSIS, Kent State University, P.J. BAKER, F.L. PRATT, ISIS, S.J. BLUNDELL, T. LANCASTER, I. FRANKE, J.S. MOELLER, Oxford University — Muon spin rotation and magnetization data of the d-metal alloy $Ni_{1-x}V_x$ are presented at several vanadium concentrations x below and above the critical $x_c \approx 11\%$ where the onset of long-range ferromagnetic (FM) order is suppressed. Bulk magnetization shows signatures of a disordered quantum phase transition (QPT), most clearly in the paramagnetic regime: Above x_c the temperature dependence of the magnetic susceptibility is best described by simple non-universal power laws marking a quantum Griffiths phase. But the deviations from a clean FM in the ordered phase are more subtle to recognize in the bulk magnetization and are noticed only close to x_c. Muon data reveal a broad field distribution in the FM regime at even small x ($x \geq 4\%$). The evolution of the magnetic cluster distribution and dynamics from the pristine FM towards the paramagnetic regime will be presented. This adds new insight in this model system at a disordered QPT.

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