

Abstract Submitted  
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**Iron impurities in gold and silver: Comparison of magnetoresistance data to numerical renormalization group calculations exploiting non-Abelian symmetries** MARKUS HANL, ANDREAS WEICHSELBAUM, Arnold Sommerfeld Center, LMU Munich, THEO COSTI, Institut für Festkörperforschung, Forschungszentrum Jülich, CHRISTOPHER BÄUERLE, Institut Neel-CNRS and Université Joseph Fourier, JAN VON DELFT, Arnold Sommerfeld Center, LMU Munich — We consider iron impurities in the noble metals gold and silver and compare experimental data for the resistivity and decoherence rate to numerical renormalization group results for a fully screened  $n$ -channel, spin  $S = n/2$  Kondo model. Our code exploits non-abelian symmetries, which increases the efficiency by orders of magnitude compared to plain abelian NRG. To be specific, the symmetries used were  $U(1)$  for charge conservation,  $U(1)$  for spin conservation in the presence of magnetic field and the  $SU(3)$  channel symmetry. Compared to previous work [1] on this subject, we show superior numerical data for both quantities at finite temperature and extend our analysis to the resistivity at finite magnetic field. We show that our results are converged and that all examined quantities can be described consistently with a single value of  $T_K$ . The excellent agreement between experiment and theory for  $n = 3$  shows that both systems are described by a spin-3/2 three-channel Kondo model. [1] T. Costi et al. Phys. Rev. Lett. **102**, 056802 (2009).

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