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Analysis of the Kondo Effect in Low Coordinated Ferromagnets
CARLOS UNTIEDT, M. REYES CALVO[1], LT-NanoLab, Dep. Física Aplicada, Universidad de Alicante, E-03690 Alicante, Spain. — Recently we reported the observation of Kondo Physics in one-atom contacts between pure ferromagnetic metals such as Fe, Co, or Ni [Nature 458, 1150 (2009)]. Using a Scanning Tunneling Microscope (STM) or Electromigrated Break Junctions we fabricated atomic contacts on these ferromagnetic materials and Fano-Kondo resonances where found in the conductance with the characteristic behavior of a Kondo system. One of the advantages of our setup configuration is the capability of the STM to study and analyze hundreds of atomic contacts. This has given us the unique opportunity of performing statistics on the Fano parameters of our conductance curves. Here we show a complete analysis of the Fano parameters of a Kondo system consisting in a one-atom contact with a localized magnetic moment interacting with the conduction electrons. A statistical analysis shows the dependence of the Kondo system with the different degrees of couplings to the environment. We will compare the cases of Ni, Fe and Co which could reflect differences in the localization of the magnetic moment.

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