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Kondo-like features in chemically pure magnetic atomic-size contacts M. REYES CALVO, JOAQUIN FERNANDEZ-ROSSIER, CARLOS UNTIEDT, LT-Nanolab. Depto. de Fisica Aplicada. Universidad de Alicante — The influence of magnetism in the electronic transport in atomic sized contacts is not yet clear. However, certain features systematically appear in the conductance measurements of magnetic atomic contacts. Specifically, the spectroscopy of atomic size contacts of Ni, Fe or Co reveal the existence of a characteristic significant peak or dip at zero bias that is not present in the case of non-magnetic materials. We have measured the differential conductance as a function of bias at 4K on two hundred monoatomic contacts of Ni, Fe and Co fabricated by STM. The zero bias anomaly has been analyzed as using the Kondo- Fano lineshape typical of magnetic adatoms in non-magnetic surfaces. The statistical analysis of the data results in Kondo temperatures around 250 K, 120 K and 80 K for Ni, Co and Fe respectively. A Kondo-like behaviour could arise in chemically pure magnetic contacts if tip atoms behave different due to their smaller coordination.

M. Reyes Calvo

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