Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

STM differential conductance of a pair of magnetic adatoms[1]
BRIAN LANE, KEVIN INGERSENT, University of Florida Department of Physics
— Competition between screening of local moments through the Kondo effect and magnetic ordering of those moments through direct or induced (RKKY) exchange interactions is a key feature of heavy-fermion systems and of metals containing dilute magnetic impurities. It should be possible to probe this competition in its purest form through scanning tunneling microscopy (STM) studies of pairs of magnetic adatoms on metallic surfaces. However, in order to interpret the STM differential conductance through a pair of nearby adatoms, it is necessary to understand the effects of Fano-like interference between different tunneling paths from the STM tip into the substrate. We report preliminary results of numerical renormalization-group calculations of the impurity spectral function and the differential tunneling conductance for the two-impurity Anderson model, and compare our results with those for the well-studied one-impurity case.

[1]Supported by NSF Grant DMR-0312939

Brian Lane
University of Florida Department of Physics

Date submitted: 30 Nov 2005 Electronic form version 1.4