

Abstract Submitted
for the MAR16 Meeting of
The American Physical Society

Lateral manipulation and interplay of local Kondo resonances in a two-impurity Kondo system. HAIMING GUO, Institute of Physics, Chinese Academy of Sciences — The control of a single spin of an atom is of great interest in Kondo physics and a potential application in spin based electronics. Low-temperature scanning tunneling microscopy and spectroscopy (LT-STM/STS) is a powerful tool to probe the single spin and its Kondo effect at the atomic scale on surfaces. I am going to present the modulation of magnetic properties and Kondo effect of Co adatoms on graphene layer. This is also the first discovery of a Kondo effect caused from a magnetic impurities doped in graphene layer in experiment. The tiny diverse interaction between magnetic impurity and graphene host further modulates the Kondo effect. Next, the atomic-scale spatial relationship of a two-impurity Kondo system at varying lateral distance will be reported. A notable interplay is determined between two individual Kondo singlet states, which are formed by the localized spins of two cobalt magnetic adatoms that are placed on different electrodes of an STM. The dI/dV spectra show the continuous changes of the resonance peak feature when approaching the Kondo tip laterally to the local sample-Kondo impurity on the surface.

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Date submitted: 05 Nov 2015

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