



SEMINAIRE ISMO

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Spin injection and detection at the atomic scale with a single Kondo impurity

I will present the first low-temperature STM measurements showing a Kondo splitting of a single atom in the presence of a spin-polarized current. A cobalt atom on the Cu(100) surface presents a Kondo resonance, which we are able to split by approaching a magnetic tip covered by copper. The junction formed with such a tip corresponds to a rudimentary giant magneto-resistance (GMR) structure. The splitting of the Kondo resonance observed with this tip is then assigned to a spin-polarized current flowing across the non-magnetic material.

I will then focus on a functionalized molecular C60 tip and show how it may be potentially interesting for probing a Kondo system. Recently, functionalized tips built by picking up molecules such as CO or H₂ have been employed to obtain an enhanced resolution in STM images. After presenting how to prepare and characterize a C60 tip, I will detail how a C60-terminated tip can be used to detect and alter the Kondo effect of Co on Cu(100). This work is a prerequisite for studying molecular point contacts exhibiting a Kondo effect.

**Attention !
Jour inhabituel**

Vendredi 13 juin 2014 à 11h
Bât 351 – 2^{ème} étage (Bibliothèque)
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