UNIVERSITÄT DUISBURG ESSEN

PHYSIK E=

Physikalisches Kolloquium: Festkolloquium Prof. Dr. Rolf Möller

Mittwoch, 19.10.2016
17:15 Uhr
Hörsaal MC 122

Electron Spin Resonance of single atoms on a surface

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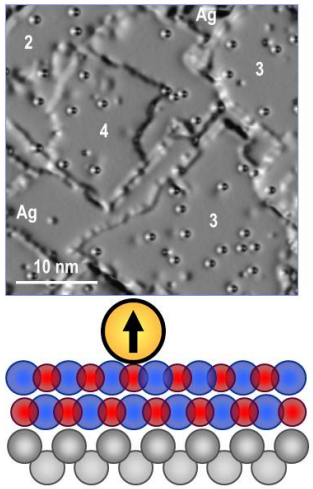

Caption

- STM image of Fe atoms on a thin film of MgO grown on Ag (100).
- Each blob is an individual Fe atom.
- MgO has different thicknesses as indicated.
- Bottom: side view of the bonding geometry. 2 layers of MgO on Ag. Fe sits on the Oxygen binding site.

The scanning tunneling microscope is an amazing experimental tool because of its atomic-scale spatial resolution. This can be combined with the use of low temperatures, culminating in precise atom manipulation and spectroscopy with microvolt energy resolution. In this talk I will apply these techniques to the investigation of the quantum spin properties of transition metal atoms on surfaces. We will conclude with our recent measurements of electron spin resonance in an STM on individual Fe atoms supported on an insulating thin film, offering unprecedented energy resolution on the atomic scale.