



Festkörper-Kolloquium und Sonderseminar TRR 80

am Donnerstag, 23.04.2015

um 17:15 Uhr

spricht

Dr. Ana Isabel Maldonado Cid

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im HS 3 im Physik-Department

über das Thema

Type II superconductivity at the nanoscale

Probing the superconducting state of a material at the local scale can give insight about both its fundamental electronic properties and its prospective technological applications. Scanning tunnelling microscopy/spectroscopy (STM/S) at very low temperatures has been successfully applied to image superconducting vortices, one by one, of many systems [1]. In this talk, I will give an overview of this technique, I will introduce a new one which allows the direct visualization of the superconducting vortex lattice under current flow (current driven STM/S [2]) and I will focus on their application to study two different superconductors. Firstly, I will present a study of the effect of the application of a transport current on an isolated vortex core of the multiband superconductor NbSe₂ [3]. Later, I will show the first characterization of a noncentrosymmetric superconductor, BiPd, using STM/S in combination with macroscopic measurements and relativistic first-principles calculations [4]. Finally, the possibilities that scanning probe techniques offer to study type II superconductors will be discussed.

ab 17:00 Uhr Kaffee vor dem Hörsaal

Einführung: C. Pfeleiderer