O 33: Invited Talk (Katharina J. Franke)

Time: Tuesday 14:00–14:45 Location: TRE Phy

Invited Talk O 33.1 Tue 14:00 TRE Phy

Competition of magnetic excitations on a superconducting surface — •Katharina J. Franke — Fachbereich Physik, Freie Universität Berlin, Germany

On normal metal surfaces the magnetic moment of an atom or molecule can be screened by the itinerant electrons as described by the Kondo effect. On a superconductor, the opening of an energy gap at the Fermi level may lead to a significant reduction of the screening, leaving a net magnetic moment to interact with the Cooper pairs. As a result the pairing energy of the Cooper pairs is reduced and spin-polarized bound states appear in the vicinity of a magnetic impurity.

Using scanning tunneling spectroscopy we explore the different magnetic excitations of metal-phthalocyanine molecules on a superconducting Pb(111) surface. The delicate balance between Kondo screening and superconducting pairing leads to quantum ground states with different magnetic properties.