Nanoscale Modeling Seminar

Dr. Damian Krychowski

Institute of Molecular Physics, Polish Academy of Sciences, Poland

Kondo effect in the presence of Majorana Fermion

Friday, 11.11.2016
13:45 – 14:15
Seminar Room 115, Hallwachsstr. 3, 01069 Dresden

The Majorana fermion is the non-abelian quasiparticle that is its own hole. The realization of these state is possible by the electron-hole triplet pairing at the ends of the topological superconducting wire. The principal aspect of the talk concerns on the spin polarized transport through the quantum dot in the Kondo regime with T-shaped attached topological superconducting wire. We show that the Majorana fermion decreases the conductance in one of the spin channel and modify the unitary limit of the total conductance in the Kondo range of different symmetries $SU(N=2,3,4)$.

Non-standard evolution of the total conductance in the presence of the Zeeman effect demonstrates the coexistence of Kondo effect and Majorana state. The coupling of the spatially separated Majorana fermions increases conductance and drastically reduces the Kondo temperature.

Host: Prof. Dr. Gianaurelio Cuniberti
Chair Materials Science and Nanotechnology
Institute for Materials Science, TU Dresden

Contact: nanoseminar@nano.tu-dresden.de.

Everybody is very welcome!