

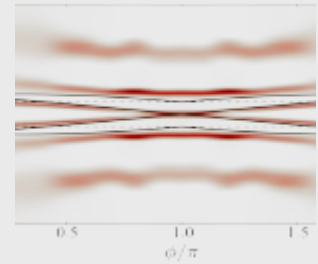
Fractional Spin And Josephson Effect In Time-reversal-invariant Topological Superconductors

Title: Fractional Spin And Josephson Effect In Time-reversal-invariant Topological Superconductors.

When: Friday, February 17, (2017), 12:00.

Place: Departamento de Física Teórica de la Materia Condensada, Facultad Ciencias, Module 5, Seminar Room (5th Floor).

Speaker: Liliana Arrachea, International Center for Advanced Studies Universidad de San Martín, Argentina.



Time reversal invariant topological superconducting (TRITOPS) wires are known to host a fractional spin $\hbar/4$ at their ends. We investigate how this fractional spin affects the Josephson current in a TRITOPS-quantum dot-TRITOPS Josephson junction, describing the wire in a model which can be tuned between a topological and a nontopological phase. We compute the equilibrium Josephson current of the full model by continuous-time Monte Carlo simulations and interpret the results within an effective low-energy theory. We show that in the topological phase, the 0-to- π transition is quenched via formation of a spin singlet from the quantum dot spin and the fractional spins associated with the two adjacent topological superconductors.

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