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Statistics of Josephson vortices in topological superconductors

EYTAN GROSFELD, University of Illinois, ADY STERN, Weizmann Institute of Science — In recent years there has been an intensive search for Majorana fermions in condensed matter systems. Predicted to be localized on cores of vortices in certain non-conventional superconductors, their presence is known to render the exchange statistics of bulk vortices non-Abelian. In this talk I will present novel results regarding the persistence of Majorana zero modes into insulating barriers, providing a way to coherently and effectively manipulate them. A method to probe the Majorana modes will be presented.

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