

Abstract Submitted
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Degeneracy lifting of zero energy (Majorana) modes in a chiral p-wave superconductor due to the tunneling between vortices.¹ MENG CHENG, ROMAN LUTCHYN, VICTOR GALITSKI, SANKAR DAS SARMA, University of Maryland — We study lifting of the degeneracy of the zero energy (Majorana) modes in a chiral $p_x + ip_y$ superconductor caused by tunneling between states localized in two different vortex cores. Using Bogoliubov-de Gennes equations, we analytically calculate the energy splitting of the Majorana modes as a function of the distance between two vortices. Our result may have applications in testing Majorana state by tunneling spectroscopy and the realization of topological quantum computation in chiral p-wave superconductors.

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