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Signatures of topological phase transition from fluctuating vortices in superconducting doped topological insulators PEDRO LOPES, UNICAMP-Univ de Campinas, POUYAN GHAEMI, Physics Department, City College of the City University of New York — We study the interplay between low energy vortex bound modes in superconducting doped topological insulators and dynamical fluctuations of the vortex position. We show how this interaction leads to corrections in the local density of states close to the vortex core signaling a topological vortex phase transition. We also present a detailed analysis of the low energy vortex bound modes, with analytic and numerical approximations, which may be used to access the quantities of physical interest.

Pedro Lopes
UNICAMP-Univ de Campinas

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