

Abstract Submitted
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Odd-frequency superconductivity at the edge of a two-dimensional topological insulator without ferromagnetic insulators
JORGE CAYAO, ANNICA BLACK-SCHAFFER, Uppsala Univ — We investigate the emergence and consequences of odd-frequency spin-triplet superconductivity in a hybrid normal-superconductor (NS) junction at the edge of a two-dimensional topological insulator. In particular, we consider proximity-induced conventional spin-singlet s-wave superconducting pairing with a finite in-plane gradient around the NS interface. We perform analytical and numerical calculations and show that odd-frequency spin-triplet superconductivity does not require the presence of ferromagnetic insulators but instead it naturally arises due to the nature of the induced pairing. We also consider SNS and NSN junctions and investigate potential transport measurements in order to identify such exotic superconducting state.

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