

# Topological suppression of magnetoconductance oscillations in NS junctions

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We show that the magnetoconductance oscillations of laterally-confined 2D NS junctions are completely suppressed when the superconductor side enters a topological phase. This suppression can be attributed to the modification of the vortex structure of local currents at the junction caused by the topological transition of the superconductor. The two regimes (with and without oscillations) could be seen in a semiconductor 2D junction with a cleaved-edge geometry, one of the junction arms having proximitized superconductivity. We predict similar oscillations and suppression as a function of the Rashba coupling. The oscillation suppression is robust against differences in chemical potential and phases of lateral superconductors.

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[1] Preprint, arXiv:1701.03082