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Edge-mode superconducting transport in InAs/GaSb heterostructures FANMING QU, VLAD PRIBIAG, ARJAN BEUKMAN, MAJA CASSIDY, LEO KOUWENHOVEN, Delft University of Technology, CHRISTOPHE CHARPENTIER, WERNER WEGSCHEIDER, ETH Zurich — Type-II InAs/GaSb heterostructures have recently attracted interest as a two-dimensional topological insulator that can be tuned between the trivial and topological phases by means of electrostatic gating. In proximity to a superconductor, 2D topological insulators are predicted to host Majorana fermions, a consequence of the helical nature of the edge-modes. Here we report superconductivity mediated by the edge-modes of InAs/GaSb quantum wells. Using superconducting quantum interference, we demonstrate tuning between edge-dominated and bulk-dominated superconducting transport regimes as a function of electrostatic gating. These experiments establish InAs/GaSb as a robust platform for further investigations of Majorana physics.

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