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**Probing Majorana fermions in one-dimensional topological superconductors using non-equilibrium transport: an open-quantum-system study** DIBYENDU ROY, CARLOS J. BOLECH, NAYANA SHAH, Department of Physics, University of Cincinnati, Cincinnati, Ohio 45221 — We study one-dimensional topological superconductors using an open-quantum-system approach based on Langevin equations. We go beyond a low-energy effective model of Majorana fermions, to derive different non-equilibrium transport properties exactly in these systems. The role of the coupling between the superconducting wire and metallic leads in physical experiments to detect Majorana bound states is also examined.

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