

Abstract Submitted  
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**Capacitive Signal of Majorana States in a Finite 1D wire**<sup>1</sup> GILAD BEN-SHACH, Harvard University, ARBEL HAIM, Weizmann Institute of Science, IAN APPELBAUM, University of Maryland, AMIR YACOBY, BERTRAND HALPERIN, Harvard University, YUVAL OREG, Weizmann Institute of Science — We propose a new measurement technique for the observation of Majorana fermion end states in finite-length semiconductor-superconductor hybrid nanowire systems. We demonstrate how a charge measurement, say by an external single-electron transistor, as a function of external magnetic field and chemical potential, could reveal the presence – or lack – of localised Majorana end states. Whereas existing experimental proposals require direct contact to the wire for tunneling measurements, our proposal avoids this issue and provides an orthogonal measurement to confirm recent experimental developments. Furthermore, we shed light on a new parameter regime for nanowire-superconductor hybrid systems.

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