

Zero-bias peaks and splitting in an Al–InAs nanowire**Moty Heiblum**

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I present initial experimental studies of a system composed of an aluminum superconductor in proximity to an indium arsenide nanowire, with the latter possessing strong spin-orbit coupling and Zeeman splitting. In the ideal case, an induced one-dimensional topological superconductor, supporting Majorana fermions at both ends of the nanowire, is expected to form. We concentrate on the characteristics of a distinct zero bias conductance peak (ZBCP) and its splitting in energy – both appearing only with a small magnetic field applied along the wire. The ZBCP was found to be robustly tied to the Fermi energy over a wide range of system parameters. While not providing a definite proof of a Majorana state, the presented data and the simulations support its existence.

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