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**“Noisy” Majorana Bound States and p-wave
Superconductors**

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Abstract

We revisit the problem of point-contact tunnel junctions and introduce a simple scheme for computing the full current-voltage characteristics using Keldysh-Schwinger Green functions. We consider s- and p-wave pairing symmetries and look for ways of determining when the superconducting states correspond to spin-triplet pairing. We direct our attention to the zero-energy bound states at the edges or vortex cores of p-wave superconductors; these are predicted to be Majorana fermions. We introduce a model Hamiltonian that describes the tunnelling processes when electrons are injected into such states and we find exact analytic expressions for the tunnelling current and noise. We identify experimental signatures of the Majorana nature of the bound states to be found in shot noise measurements.