

Experiments on Kitaev chains in nanowires

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We have realized Kitaev chains in arrays of quantum dots intersected with hybrid semiconducting-superconducting sections. We exploit Andreev Bound States (ABS) in the hybrids to provide coupling between neighboring quantum dots through Elastic Co-Tunneling (ECT) and Crossed-Andreev Reflection (CAR). The combination of ECT and CAR can give rise to a ground state degeneracy for even and odd occupations. At these sweet spots partially-protected Majorana Bound States (MBS) arise in the outer quantum dots. We have studied chains ranging from minimal length with two quantum dots up to a six-site chain. We will discuss the improved protection when making the chains longer.