

## Particle Physics On a Chip: the Search for Majorana Fermions

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Title: Particle Physics On a Chip: the Search for Majorana Fermions

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ABSTRACT:

**M**ajorana fermions were predicted in 1937 by Ettore Majorana in Rome. These are particles with the mysterious property that they are equal to their anti-particles. This defining property immediately implies that these “Majoranas” have zero charge and zero energy. Ongoing searches for detecting Majoranas occur in the context of high-energy physics and dark matter, but yet without success. Simultaneously, condensed matter theorists proposed specially designed electronics that can host Majoranas. This insight led to a successful experiment that has the signature of a Majorana, potentially the key to developing a quantum computer.