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Odd-frequency superconductivity in a nanowire coupled to Majorana zero modes[1] SHU-PING LEE, University of Alberta, ROMAN M. LUTCHYN, Microsoft Station Q , JOSEPH MACIEJKO, University of Alberta
— Odd-frequency superconductivity, originally proposed by Berezinskii in 1974, is an exotic phase of matter in which pairing is entirely dynamical in nature. The pair potential is an odd function of frequency, leading to a vanishing static superconducting order parameter and exotic types of pairing seemingly inconsistent with Fermi statistics, such as spin triplet (singlet) pairing in an s-wave (p-wave) superconductor. Motivated by recent experimental progress in the realization of Majorana zero modes in semiconducting nanowires, we show that a spin-polarized nanowire coupled to a one-dimensional array of Majorana zero modes becomes an odd-frequency superconductor.

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