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Detecting Magnetic Dark Matter

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The evidence for dark matter is overwhelming, but its nature is unknown. Dark matter can be composed of the magnetic monopoles of a hidden sector, which acquire small coupling to the visible photon through kinetic mixing. When the hidden sector U(1) is broken, the monopoles confine, connected by a tube of magnetic flux. These flux tubes give rise to phase shifts in Aharanov-Bohm experiments. I show the existing experimental constraints on this scenario, and explain how to search for dark matter with Aharanov-Bohm type detectors.

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