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Novel Experiments to Search for Axions Below a Micro Electron Volt MICHAEL TOBAR, University of Western Australia, PAUL ALTIN, Australian National University, WILLIAM CAMPBELL, MAXIM GORYACHEV, EUGENE IVANOV, BEN MCALLISTER, CATRIONA THOMSON, University of Western Australia — We present current experiments being undertaken at the University of Western Australia to search for axions of mass below one micro electron volt. First we discuss a technique that detects the electromotive force generated in an electronic circuit when converting axions to electricity under a DC magnetic field [1-4]. The second technique mixes two frequency stabilized oscillators, which interact with the axion at the difference frequency of the oscillators [5]. Initial experiments put various limits on the axion-photon coupling, and we discuss the experimental path to search for known axion models. [1] ME Tobar, BT McAllister, M Goryachev, Phys. Rev. Applied 15, 014007 (2021) [2]ME Tobar, RY Chiao, M Goryachev, arXiv:2101.00945 [physics.class-ph], (2021) [3]ME Tobar, BT McAllister, M Goryachev, Physics of the Dark Universe26, 100339 (2019) [4]ME Tobar, BT McAllister, M Goryachev, Physics of the Dark Universe30, 100624 (2020) [5] CA Thomson, BT. McAllister, M Goryachev, EN Ivanov, ME Tobar, arXiv:1912.07751 [hep-ex]

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