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International Axion Observatory (IAXO): status and prospects

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International Axion Observatory (IAXO) is a new generation axion helioscope aiming to search for solar axions and axion-like particles (ALPs) with a signal to background ratio of about 5 orders of magnitude higher than the one achieved by currently the most sensitive axion helioscope, CAST. IAXO relies on large improvements in magnetic field volume and extensive use of x-ray focusing optics combined with low-background detectors. IAXO will probe a substantial unexplored region of the axion and ALP parameter space which is theoretically and cosmologically motivated, and thus will have significant discovery potential. IAXO could also be used to test models of other proposed particles at the low energy frontier of particle physics, like hidden photons or chameleons. In addition, the IAXO magnet could accommodate new equipment to search for relic axions or ALPs potentially composing the galactic halo of dark matter.

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