

The QSHS Haloscope, Axion Dark Matter, and Cavity Tuning

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Axions are a wave-like dark matter candidate, first proposed to solve the strong CP problem of quantum chromodynamics. Axions have many properties currently expected of dark matter, with the last decade seeing the start of many axion experiments and collaborations across the world.

A brief summary on the aims, design, and status of the Quantum Sensors for the Hidden Sector (QSHS) axion dark matter haloscope and quantum device test-bed is given. A particular focus is placed on mechanising the cavity at 10 mK and tracking the mode of interest for searches, as well as the overall data taking and analysis procedure.

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