

The ORGAN Experiment: status of the experiment and novel resonator design

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At the University of Western Australia we are commissioning a haloscope designed to probe for high mass axions (frequencies greater than 15 GHz) with an initial search focused around 26.6 GHz, in order to perform a direct test of a claimed result suggesting axions at 110 micro-eV. After this, we will move to a wider range of the axion parameter space to test predictions of many theoretical models. The experiment underwent its pathfinding run in December 2016, and is in preparation for the next stage. We discuss the design and results of the pathfinding run of the experiment, as well as the future planned stages. This will include a discussion of novel resonator design proposals based on dielectric materials such as Bragg reflectors, and other structures. These technologies will be implemented in the future stages of the ORGAN experiment, which has recently received funding to conduct a seven year axion haloscope search.

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