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TAXO - Towards an ultra-low background semiconductor detector for IAXO

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IAXO aims to detect solar axions as they are back-converted into X-rays along a strong magnet pointed towards the sun. Excellent spectroscopic performance, high X-ray absorption efficiency at and below 10 keV, and great potential for ultra-low background operations are features of silicon drift detectors that could facilitate this endeavour. TAXO is a two-stage project which aims to demonstrate ultra-low background X-ray detection at shallow depth, exploiting material properties and a novel all-semiconductor active-shield concept. Our poster displays the progress towards an ultra-low background semiconductor detector for IAXO, including first background results. This work is supported by the Semiconductor Laboratory of the Max Planck Society, the Excellence Cluster ORIGINS, the SFB1258, and the Bavarian Academy of Sciences and Humanities.

Submitted on behalf of a Collaboration?

No

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