

9th SYMPOSIUM ON LARGE TPCs FOR LOW-ENERGY RARE EVENT DETECTION



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A low-background Micromegas detector for IAXO and BabyIAXO

The baseline detection technique for IAXO and BabyIAXO consist of an ultra-low background Time Projection Chamber (TPC) coupled to pixelated Micromegas readout. Microbulk Micromegas detectors show convenient features for solar axion searches because their performance is very stable, they present good energy resolution in the IAXO range of interest, they provide topological information of the detected events and also, very low background levels can be achieved. To prove the performance and the background levels of the IAXO and BabyIAXO detectors, a prototype called IAXOD0 has been commissioned at the University of Zaragoza. The characterization and the preliminary tests proved the detector to be stable and the first data taking campaign was performed during August. In parallel, a IAXOD0 background model simulation is being computed in order to fully understand the detector's background. REST is the software used for both the simulations and the analysis.

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