

# Low background detectors for low energy X-rays in the scope of IAXO

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In the scope of the search for axions and axion like particles (Alps) with helioscopes, like the International Axion Observatory (IAXO) and its precursor BabyIAXO, detectors capable of measuring low energy X-rays down to the 200 eV range are necessary. For this purpose the GridPix detector is an appropriate solution, which has already been used successfully at CAST.

The GridPix is a MicroMegas like readout consisting of a pixelized readout ASIC (Timepix/Timepix3) with a perfectly aligned gas amplification stage, which is photolithographically built on top of the ASIC. This detector is capable of detecting single electrons allowing the measurement of low energy X-rays. To convert these the X-rays into electrons a small gas volume is built above the readout sealed with an X-ray entrance window. this detector is only composed of radiopure materials to reach the background goals of IAXO.

The challenges of the design process and the current status of the detector will be presented.

## Funding information

**Primary author:** Mr SCHIFFER, Tobias (University of Bonn)

**Co-authors:** KAMINSKI, Jochen (University of Bonn (DE)); DESCH, Klaus (University of Bonn (DE)); GRUBER, Markus (Universität Bonn); Mr SCHMIDT, Sebastian (University of Bonn)

**Presenter:** Mr SCHIFFER, Tobias (University of Bonn)

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