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Performance of the CAST Micromegas detectors detectors and perspectives for IAXO

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During 2013 to 2015 the CERN Axion Solar Telescope (CAST) has effectuated its final phase of solar axion searches providing a world leading limit on the axion photon coupling strength for $m_a < 0.02$ eV. This sensitivity has been reached thanks to the development of novel detection systems, notably new Micromegas detectors with lower background levels, as well as a new X-Ray Telescope built specifically for axion searches. The background level achieved is below 10^{-6} keV $^{-1}$ cm $^{-2}$ s $^{-1}$. These innovations serve as pathfinders for a possible next-generation axion helioscope, notably the proposed International Axion Observatory (IAXO). The planned developments of the Micromegas IAXO detectors will also be shown.

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