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A new Micromegas line for the CAST experiment

A low background Micromegas detector has been operating on the CAST experiment at CERN for the search of solar axions during the first phase of the experiment. A very high level of background rejection (4 × 10 −5 counts keV −1cm−2s−1) was achieved due to its good spatial and energy resolution as well as the low radioactivity materials used in the construction of the detector. For the second phase of the experiment, the detector has been upgraded by adding a shielding and including focusing optics. These improvements should allow for a background rejection better than two orders of magnitude. The preliminary results of the first tests in the laboratory and in the PANTER X-ray test facility will be shown.

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