

Overview and physics motivation of the XMASS experiment

The XMASS experiment, proposed as a multi-purpose underground detector using liquid xenon, is now constructing an 800 kg xenon detector in the Kamioka mine in Japan. The detector is designed especially to search for WIMP dark matter candidates. The main feature of the detector to reduce gamma ray backgrounds is the self-shielding effect of liquid xenon. In addition, the detector is located in a water tank to reduce incoming neutron backgrounds. The background event rate is expected to be as low as $1e-4$ count/day/kg/keVee. The characteristics of the experiment and the sensitivity to WIMP dark matter are presented.

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