



Contribution ID: 119

Type: Oral

First Measurements of SuperCDMS SNOLAB 100 mm Diameter Germanium Dark Matter Detectors with Interleaved Charge and Phonon Channels

Wednesday, 4 June 2014 16:20 (20 minutes)

The first phase of the Super Cryogenic Dark Matter Search (SuperCDMS) SNOLAB experiment shall consist of a 110 kg array of germanium and silicon athermal phonon detectors. It is expected to reach an order of magnitude better sensitivity than has been achieved so far by the best experiments in the field. The technical challenges of commissioning a payload of this size have led to the development of 1.4 kg germanium detectors (100 mm diameter, 33 mm thick), which are 2.3 times larger than those presently in use in the SuperCDMS experiment at Soudan. The first results from testing of a prototype detector with interleaved phonon and charge channels are presented. The test results are promising for the use of these detectors in the next phase of SuperCDMS.

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Session Classification: II.d Dark Matter

Track Classification: Experiments: 2d) Dark Matter Detectors