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Constraints on Low-Mass WIMP signals from CDMS

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Two different, previously released, Cryogenic Dark Matter Search (CDMS) data sets have been reanalyzed to improve sensitivity to low-mass Weakly Interacting Massive Particle (WIMP) signals. The first data set was obtained from 2001 to 2002 at the shallow-depth Stanford Underground Facility (SUF) with four germanium and two silicon detectors. The second data set utilized eight germanium detectors at the deep Soudan Underground Laboratory from 2006 to 2008. The SUF data excludes parameter space between 3 and 4 GeV / c^2 while the Soudan result excludes parameter space favored by the DAMA / LIBRA and CoGeNT data as light WIMP signals at the $>90\%$ level. Expected performance of new detectors with an interleaved charge readout, also being commissioned at Soudan, will also be discussed.

Auteur principal: Dr LEMAN, Steven (MIT)

Co-auteur: ON BEHALF OF THE CDMS COLLABORATION, . (.)

Orateur: Dr LEMAN, Steven (MIT)

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Classification de thématique: Experiment