



Contribution ID: 29

Type: Poster

WIMP Dark Matter Modulation Analysis on Data from Low Threshold Germanium Detectors

Wednesday, 31 July 2019 18:05 (1 hour)

we present results on light weakly interacting massive particles (WIMPs) searches with annual modulation (AM) analysis on data from a 1-kg mass p-type point-contact germanium detector of the CDEX-1B experiment at the China Jinping Underground Laboratory. Data set with a total live-time of 3.2 years within a 4.2-year span are analyzed with physics threshold of 250 eVee. Annual modulation limits on WIMP-nucleus (χ -N) elastic scatterings cross-section through spin-independent interactions, as well as limits on Migdal effects, bremsstrahlung emissions of WIMP-nucleus will be explained. Diurnal modulation limits on WIMP-nucleus and annual modulation limits on WIMP-electrons (χ -e) will also be reported. In these analyses, we adopted a binned chi-squared approach, that allowed us to avoid background interpretation. Unknown background contributions, as well as those from time static dark matter contributions, are treated as free parameters to be fitted.

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Session Classification: Poster session