

Analysis of 3+ years of CoGeNT Data

Wednesday, 11 September 2013 19:30 (2h 30m)

The CoGeNT dark matter detector has been taking data at the Soudan mine since December 2009. Recently, over 3 years of CoGeNT data have been released. The data has been analyzed for a possible WIMP signal using multi-dimensional PDFs in energy, time, and pulse rise-time. The bulk event (fast rise-time pulses) and surface (slow rise-time) event fractions are determined through this analysis. We have also done extensive simulations of backgrounds for the CoGeNT detector, and these backgrounds are compared to the CoGeNT data. The current plans for the next generation detector, C4, are also outlined. We will detail specific improvements in background reduction and energy resolution. Finally, our results are compared to other experiments in the context of low-mass dark matter.

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Session Classification: Poster Session

Track Classification: Dark Matter