

Abstract Submitted
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Monte Carlo studies of the CoGeNT detector for a variety of dark matter candidates RONNIE RERA, MATTHEW BELLIS, Siena Coll, JUAN COLLAR, NICOLE FIELDS, University of Chicago, CHRIS KELSO, University of North Florida — Since December 2009, the CoGeNT experiment has recorded interactions in the detector with the goal of either detecting dark matter or setting stringent limits on the mass and cross-section of these particles, assuming that dark matter is a form of WIMP (Weakly Interacting Massive Particle). The collaboration has made public this dataset to the broader community and this analysis is based on that dataset. and we have a set of analysis tools that performs an unbinned, maximum likelihood fit to the data, accounting for known backgrounds and systematic effects. Here we present a set of studies using Monte Carlo datasets which mimic these backgrounds and can add an arbitrary amount of WIMP signal, parametrized by energy deposition and time of year, mass, cross-section, and choice of local WIMP velocity distribution. We use these tools to check the robustness of our fitting approach and to test for sensitivity and bias. The current status of this analysis will be presented.

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