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A search for WIMPs and tests of local dark matter velocity distributions with the CoGeNT public dataset MATTHEW BELLIS, Siena College, CHRIS KELSO, University of Utah, JUAN COLLAR, NICOLE FIELDS, University of Chicago — 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. We perform an unbinned, maximum likelihood fit to the data, accounting for known backgrounds and systematic effects. We model the WIMP signal, parametrized by energy deposition and time of year, mass, cross-section, and choice of local WIMP velocity distribution. The velocity distribution is modeled with a Maxwellian-Boltzman distribution, as well as more directional streams. The current status of this analysis will be presented.

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