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Multi-Dimensional Effective Field Theory Analysis for Direct Detection of Dark Matter HANNAH ROGERS, Univ of Minnesota - Twin Cities, SUPERCDMS COLLABORATION — Experiments like the Cryogenic Dark Matter Search (CDMS) attempt to find dark matter (non-luminous matter that makes up approximately 80% of the matter in the universe) through direct detection of interactions between dark matter and a target material. The Effective Field Theory (EFT) approach increases the number of considered interactions between dark matter and the normal, target matter from two (spin independent and spin dependent interactions) to eleven operators with four possible interference terms. These additional operators allow for a more complete analysis of complimentary direct dark matter searches; however, the higher dimensional likelihoods necessary to span an increase in operators requires a clever computational tool such as MultiNest. I present here analyses of published and projected data from CDMS (Si and Ge targets) and LUX (liquid Xe target) assuming operator parameter spaces ranging from 3 - 5 dimensions and folding in information on energy-dependent backgrounds when possible.

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