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Simulation of DRIFT Dark Matter Detector[1] MATTHEW WILLIAMS, Colorado State Univ, DRIFT COLLABORATION — The DRIFT dark matter experiment has the potential to provide strong evidence for dark matter by showing the presence of directionality in WIMP-nuclear recoils. The orientation of nuclear recoils is detected through the use of low pressure time projection chambers, but potential setbacks for directional capability include the random walk behavior of low energy recoils and thermal diffusion. Through Monte-Carlo simulation I aim to statistically assess the directional capability of the detector and its potential design improvements. This simulation models the galactic WIMP halo, ionization tracks from nuclear recoils, and the resulting current signals.

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Matthew Williams
Colorado State Univ

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