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Estimation of Anomalous Single Scatter Events in XENON100 Data[1] KYUNGEUN LIM, Columbia University, XENON100 COLLABORATION — Anomalous single scatter events in XENON100 are events that have only one scintillation pulse (S1) and one ionization pulse (S2), but are multiple scatters in nature. Only one scatter takes place inside the detector's charge and light sensitive volume, resulting in a S2/S1 ratio that is lower than that of true single scatter events and typical of that expected from a WIMP interaction. The identification and suppression of these anomalous events is therefore essential for a sensitive dark matter search. I present results from a Monte Carlo (MC) study that was carried out to estimate the expected number of anomalous single scatter events in the XENON100 WIMP search data. The MC was validated with a comparison with Co-60 gamma-calibration data.

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