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# Light WIMP Searches: The Effect of the Uncertainty in Recoil Energy Scale and Quenching Factor

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Taking liquid xenon detectors as a case study, the importance of a robust recoil energy calibration as a prerequisite to a search for light-mass Weakly Interacting Massive Particles (WIMPs) is emphasized. Important shortfalls in the analysis of existing measurements of the relative scintillation efficiency and ionization yield for nuclear recoils in liquid xenon are described, leading to the conclusion that recent attempts to extract light-WIMP sensitivity limits from the XENON10 and XENON100 detectors are premature and overly optimistic.

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