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Characterization of Delayed Ionization Backgrounds in the LZ Experiment

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Dual-phase noble liquid time projection chambers (TPCs) are known to experience delayed ionization backgrounds which persist for at least a second after an ionization event occurs. Their rate has been observed by some experiments to exhibit a characteristic power law in time, but the cause is not yet understood. This work presents an analysis of delayed ionization backgrounds from different regions of the LZ TPC. The dependence of these backgrounds on various detector conditions is discussed, revealing features which may have been overlooked by previous studies.

Early Career

No

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