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Background Model Status and Improvements for the LUX Detector BRIAN TENNYSON, Yale University, LUX COLLABORATION — The LUX dark matter search experiment is a 350 kg two-phase liquid/gas xenon time projection chamber located at the 4850 ft level of the Sanford Underground Research Facility in Lead, SD. Gamma radiation from detector components produces a significant number of the background events seen by the LUX detector. The gamma ray background model implemented in an ongoing re-analysis of the first science run builds on the model employed in the original results announcement. This revised background model was created with a greater number of simulated events and allows for the model to include a spatial distribution component in addition to an energy distribution component. This revised model is expected to provide improved sensitivity to a dark matter signal in a forthcoming re-analysis, since dark matter event distribution is not expected to vary with position.

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