

Radon-Related Backgrounds in the LUX Dark Matter Search

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The LUX detector is currently in operation at the Davis Campus at the 4850 level of the Sanford Underground Research Facility in Lead, SD to directly search for WIMP dark matter. Knowing the type and amount of backgrounds is critical in a rare, low energy event search, and LUX was designed, constructed, and deployed to mitigate backgrounds, both internal and external. An important internal background are decays of radon and its daughters. These consist of alpha decays, which are easily tagged but not directly an important background, and beta decays, some of which are not as readily tagged and can be a background for the WIMP search. We report on studies of alpha decays and discuss implications for the WIMP search.

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