Modeling radon daughter deposition rates for low background detectors S. WESTERDALE, Los Alamos National Laboratory, Massachusetts Institute of Technology, V.E. GUISEPPE, K. RIELAGE, S.R. ELLIOT, A. HIME, Los Alamos National Laboratory, WEAK INTERACTIONS TEAM — Detectors such as those looking for dark matter and those working to detect neutrinoless double-beta decay require record low levels of background radiation. One major source of background radiation is from radon daughters that decay from airborne radon. In particular, ^{222}Rn decay products may be deposited on any detector materials that are exposed to environmental radon. Long-lasting daughters, especially ^{210}Pb, can pose a long-term background radiation source that can interfere with the detectors' measurements by emitting alpha particles into sensitive parts of the detectors. A better understanding of this radon daughter deposition will allow for preventative actions to be taken to minimize the amount of noise from this source. A test stand has therefore been set up to study the impact of various environmental factors on the rate of radon daughter deposition so that a model can be constructed. Results from the test stand and a model of radon daughter deposition will be presented.

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