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Preliminary Steps Towards Simulating Gamma-Gamma Coincidence Events in the CTBT Dual Detector and Determining its Minimum Detectable Activity

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The Health Canada CTBT detector has the potential to improve the sensitivity of the low background gamma ray counting facility at SNOLAB. Since the CTBT detector is a dual detector design it is possible to observe gamma coincidence events in the detector. These events are significant as they offer the chance to lower the background noise floor in the detector by excluding events that fell outside the coincidence time window. We present the work taken to modernize the low background lab's GEANT4 simulations of the high purity gamma detectors and preliminary results on the CTBT detector's minimum detectable activity for coincidence events.

Topics - Please choose one:

Nuclear

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