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## Background Modelling for the TEXONO Coherent Neutrino Scattering reactor experiment

*Monday 12 December 2022 14:00 (1 hour)*

We present a background model for TEXONO experiment that is situated in the Kuo-Sheng Neutrino Laboratory under 50-ton passive shielding house. The model includes background contributions from both internal and external contaminations. We adopt the Geant4-based simulation framework to develop the background model, taking into account all contributions from nine radioactive nuclides:  $^{40}\text{K}$ ,  $^{208}\text{Tl}$ ,  $^{210}\text{Pb}$ ,  $^{212}\text{Bi}$ ,  $^{212}\text{Pb}$ ,  $^{214}\text{Bi}$ ,  $^{226}\text{Ra}$ ,  $^{228}\text{Ac}$ , and  $^{234}\text{Th}$  which are identified from the experimental reference data. The airborne radioactive nuclides related to reactor is also included in this study. In order to include the cosmic ray induced background into model, intensive studies are in progress.

### Session

Future Experiments and Detector Development

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