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Background Modelling for the TEXONO Coherent Neutrino Scattering reactor experiment

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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 K, 208 Tl, 210 Pb, 212 Bi, 212 Pb, 214 Bi, 226 Ra, 228 Ac, and 234 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

Primary author: Mr PARHI, S. (Central University of South bihar)

Co-authors: Ms C., Greeshma (Central University of South bihar); Prof. WONG, H.T. (Academia Sinica, Taipei 11529, Taiwan.); Dr SINGH, L. (Central University of South bihar); Mr RAJ, R. (Central University of South bihar); Mr SHARMA, R. (Central University of South bihar); Prof. SINGH, V. (Central University of South bihar)

Presenter: Mr PARHI, S. (Central University of South bihar)

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