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Title of the poster: Detecting geoneutrinos and reactor antineutrinos in the world

Abstract

The detection of electron antineutrinos in liquid scintillation detectors is playing a crucial role in both exploring neutrino physics and in unveiling the interior of the Earth and the operation of nuclear reactors. As the reactor antineutrino energy spectrum extends beyond the endpoint of the geoneutrino (i.e. terrestrial antineutrinos) spectrum, a significant overlap between reactor and geoneutrino signals is observed. We estimate the antineutrino signal from commercial nuclear power plants as fundamental background for geoneutrino measurements.

We adopt reactor operational information published every year by the International Atomic Energy Agency, collected in a database that covers a time lapse of 10 years and which is available at www.fe.infn.it/antineutrino.

Summary

Geoneutrinos, antineutrinos from reactor, reactor spectra, neutrino detectors.

Baldoncini, M., Callegari, I., Fiorentini, G., Mantovani, F., Ricci, B., Strati, V., Xhixha, G., 2014. A reference worldwide model for antineutrinos from reactors. arXiv:1411.6475 [hep-ex, physics:physics].