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Neutron production from cosmic-ray muons at Daya Bay

Neutrons induced by cosmic-ray muons are a significant background for underground experiments studying neutrino oscillations, neutrino-less double beta decay, dark matter and other rare-event signals. The Daya Bay Reactor Antineutrino experiment consists of 8 antineutrino detectors (AD) placed in three experimental halls at different baselines from six nuclear reactors. Each AD contains 20 tons of Gd-doped liquid scintillator, serving as the main target for antineutrinos interacting via the inverse beta-decay (IBD) reaction. The data from Daya Bay allows to make a competitive measurement of neutron production by cosmogenic muons at depths of 250, 265 and 860 meters-water-equivalent. This poster will provide a comprehensive review on the status of this study.

Experimental Collaboration

Daya Bay Collaboration

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