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Neutral Current Neutrino Interactions in MINOS

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Abstract content

The Main Injector Neutrino Oscillation Search (MINOS) long baseline experiment has been actively taking beam data since 2005, having already accumulated 2.6E20 protons-on-target. MINOS uses the most powerful neutrino beam currently in operation measured in two locations: a Near detector at Fermilab, close to beam production, and a Far detector, 735 km downstream, in Northern Minnesota. Although the measurement of neutrino oscillations is the primary goal of MINOS, relevant contributions can be extracted from studies of neutral current neutrino interactions in the detectors. The several million neutrinos per year observed at the Near detector may improve the existing body of knowledge of neutrino cross-sections and the Near-Far comparison of the observed energy spectrum neutral current events constrains oscillations into sterile neutrinos. This poster outlines the MINOS capabilities of observing neutral current neutrino events, describes the employed methodology for event selection and shows preliminary results obtained. An outlook on the expected neutral current related contributions from MINOS is also presented.

If this papers is presented for a collaboration, please specify the collaboration

MINOS

Summary

Reference

Proceedings of the 30th International Cosmic Ray Conference; Rogelio Caballero, Juan Carlos D'Olivo, Gustavo Medina-Tanco, Lukas Nellen, Federico A. Sánchez, José F. Valdés-Galicia (eds.); Universidad Nacional Autónoma de México, Mexico City, Mexico, 2008; Vol. 5 (HE part 2), pages 1307-1310

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