PHYSICS AND ASTRONOMY
SEMINAR

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"Searching for Oscillating Neutrinos at T2K: Results and Prospects"

Abstract

Neutrino oscillations have been a hot topic in recent decades as experiments have revealed large mixing between nature's most enigmatic elementary particles. In contrast to the mixing of quarks, measurements have shown that two of the neutrino mixing angles are near maximal. Until recently, however, oscillations through the smallest mixing angle, θ13, had not been observed. T2K is a long baseline high intensity neutrino oscillation experiment employing an off-axis beam to search for the appearance of electron neutrinos in a muon neutrino beam, oscillations that are governed by θ13. In 2011, T2K released a search for electron neutrino appearance that rejected a value of zero for θ13 at 90% confidence, opening the door for the observation of CP violation in neutrino oscillations. In this talk, I will review the measurements of electron neutrino appearance and muon neutrino disappearance made by T2K. I will also discuss the future prospects for T2K in light of the many recent exciting results from neutrino oscillation experiments.

Monday, April 02, 2012
2:00 p.m.
Clearihue Building
Room D125