

# OBSERVATION OF ELECTRON ANTINEUTRINO DISAPPEARANCE BY THE DAYA BAY REACTOR NEUTRINO EXPERIMENT

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Many experiments have demonstrated the neutrino's ability to change flavor while traveling through space. One of the last remaining unknown parameters describing these oscillations,  $\theta_{13}$ , is crucial in defining the magnitude of possible CP-violation in the lepton sector, and examining the neutrino's role in the universe's matter-antimatter asymmetry. The Daya Bay experiment has measured  $\theta_{13}$  with unprecedented precision by observing the disappearance of reactor antineutrinos with identical detectors at multiple locations. With roughly two months of data, the experiment has measured the value of  $\sin^2(2\theta_{13})$  to be  $0.092 \pm 0.017$ , and excluded the  $\theta_{13}=0$  hypothesis to five standard deviations. This talk will describe the Daya Bay experiment and current results.

Particle  
Physics  
Seminar

All interested  
persons are  
cordially  
invited to  
attend.