The Daya Bay Reactor Neutrino Experiment

MARY BISHAI, Brookhaven National Laboratory, DAYA BAY COLLABORATION — The 3x3 PMNS leptonic mixing matrix relates the mass and flavor eigenstates of the 3 known neutrinos. The $\theta_{13}$ mixing angle is the last unknown mixing angle in the PMNS matrix, the parameters of which must be determined experimentally. The goal of the Daya Bay experiment is to measure $\theta_{13}$ with a sensitivity in $\sin^2(2\theta_{13})$ of 0.01. The Daya Bay experiment will search for the ‘disappearance’ of reactor electron antineutrinos from the Daya Bay and Ling Ao Nuclear Power Plants located in Daya Bay, Guangdong, China using multiple identical detectors at different baselines. The status and prospects of the experiment will be presented.