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Current Status of RENO Experiment

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The RENO (Reactor Experiment for Neutrino Oscillation) is under construction to measure the value of the smallest and unknown neutrino mixing angle θ_{13} . The experiment will compare the measured fluxes of electron antineutrinos at two detectors located at 290 m and 1.4 km distances from the center of the Yongg-wang nuclear reactors in Korea, with world-second largest thermal power output of 16.4 GW.

Construction of experimental halls and access tunnels for both near and far detector sites was completed in early 2009. The detectors are near completion, and data-taking is planned to start in mid 2010. An expected number of observed antineutrino is roughly 510 and 80 per day in the near detector and far detector, respectively. An estimated systematic uncertainty associated with the measurement is less than 0.6%, and an expected statistical error is about 0.3%. With three years of data, the experiment will search for the mixing angle values of $\sin^2(2\theta_{13})$ down to 0.02 in 90% C.L. limit. In this talk, the construction status will be presented.

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