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Daya Bay Reactor Neutrino Experiment Muon System YUE MENG, DEBABRATA MOHAPATRA, Virginia Tech, DAYA BAY REACTOR NEUTRINO EXPERIMENT COLLABORATION — The search for θ_{13}, the last unknown mixing angle, is extremely important in understanding the lepton flavor mixing matrix, and the CP violation in the lepton sector. Reactor neutrino experiments can provide a clean laboratory for the θ_{13} measurement via electron antineutrino disappearance. The Daya Bay experiment proposes to measure $\sin^2 2\theta_{13}$ with a sensitivity better than 0.01 (90% C.L) in a three-year-run at the Daya Bay reactor power plant in China. To achieve this, the muon-induced backgrounds must be reduced to a low level. The Daya Bay muon system is a dual tagging system with multiple layers of resistive plate chambers (RPCs) above a water-pool (Cherenkov light detector). It detects cosmic ray muons and measures their time and positions relative to signal events with an overall combined efficiency of more than 99.5%. In this talk we are going to present details of the muon system along with the current status and estimates of expected background rates.

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