

Abstract Submitted
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Double Chooz Laser Calibration YUJING SUN, The University of Alabama, DOUBLE CHOOZ COLLABORATION — The Double Chooz experiment focuses on measuring the neutrino mixing angle without the ambiguity of matter effects and CP violation. A multi-detector setup can extend the reach in sensitivity for θ_{13} with reduced systematic error. Two identical detectors, the far and the near, are constructed at 1050 m and 400 m respectively, from the Chooz nuclear cores. The far detector is taking data while the near detector is being constructed. The university of alabama group is responsible for the laser calibration system development in both the hardware design and the analysis software including extracting calibration constants of the inner detector PMT gains, charge likelihoods, PMT time offsets and effective speed of light. Two types of lasers are used for the PMT charge and time related calibrations respectively. A UV laser with a wavelength of 380 nm is mainly responsible for the PMT gains and charge likelihoods calibrations. A blue laser of 470 nm wavelength is used in calibrating the PMT time offsets and measuring the speed of light in the medium. In this presentation I will talk about the laser system hardware design and laser calibration data analysis.

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