

Abstract Submitted
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Development of light collectors for the Long Baseline Neutrino Experiment (LBNE)¹ JELENA MARICIC, Drexel University, LBNE COLLABORATION — Long Baseline Neutrino Experiment will search for the appearance signal of electron neutrinos and antineutrinos in the muon neutrino and muon antineutrino beam, respectively, sent from Fermilab 1300 km away. Positive appearance signal will lead to a possible measurement of CP-violation phase in the lepton sector, measurement of the neutrino mass hierarchy and angle θ_{13} . Two detector options are currently in the R&D phase: large water Cherenkov detector and liquid Argonne detector. Here we report on the development of light collectors to be placed around photomultiplier tube front for increased light collection. We also study their potential benefits to the water Cherenkov detector performance and sensitivity.

¹NSF S4 grant Development of megaton scale water Cherenkov detector

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