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Proton Decay in America

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ABSTRACT

The status of the design of the far detector options at the Homestake site for the Long Baseline Neutrino Experiment (LBNE) is reviewed.

The options being considered have now been narrowed to two: a 200 kton water Cherenkov detector at a depth of 4200 m.w.e. and a 34 kton liquid argon detector at a depth of 700 m.w.e. The reasoning for narrowing to these two options is presented, along with an assessment of the proton decay capabilities of each. The current status of the experimental design and approval process is also presented.