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# Baseline optimization in a long-baseline neutrino oscillation experiment

Next-generation long-baseline electron neutrino appearance experiments will seek to discover CP violation, determine the mass hierarchy and resolve the theta_{23} octant. In light of the recent precision measurements of theta_{13}, we consider the sensitivity of these measurements in a study to determine the optimal baseline, including practical considerations regarding beam and detector performance. We conclude that a detector at a baseline of at least 1000~km in a wide-band muon neutrino beam is the optimal configuration.

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