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## The impact of sterile neutrinos on long-baseline measurements ( $15' + 2'$ )

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With the Deep Underground Neutrino Experiment (DUNE) as an example, we show that even one sterile neutrino of mass  $\sim 1$  eV, if real, could significantly impact the interpretation of future long-baseline measurements. Such measurements, interpreted without taking the sterile neutrino into account, could suggest that CP violation is absent or at most very small, when in fact it is large. Observations interpreted as measuring the sole oscillation-relevant CP-violating phase in the standard  $3 \times 3$  leptonic mixing matrix could in fact be measuring something else. The conclusion is that it is very important to experimentally probe the possibility that light sterile neutrinos exist. We report on the degree to which future searches for these sterile neutrinos, if negative, need to constrain sterile-active mixing to ensure that long-baseline experiments can safely be interpreted without taking sterile neutrinos into account.

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