

Abstract Submitted  
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**Sterile neutrinos at LBNE** DAVID HOLLANDER, IRINA MOCIOIU,  
Pennsylvania State Univ — In this paper we examine the sensitivity of the Long  
Baseline Neutrino Oscillation Experiment to the inclusion of two new sterile neu-  
trino flavors with masses in the eV range. We implement a modified Casas-Ibarra  
parametrization which can accommodate medium scale mass eigenstates and intro-  
duces a new complex mixing angle. We explore the new mixing angle parameter  
space and demonstrate how LBNE can be used to either provide evidence for or  
rule out a particular model of sterile neutrinos. Certain three-flavor CP-violation  
scenarios cannot be distinguished from the sterile neutrinos. Constraints from the  
Daya Bay reactor experiment are used to help lift this degeneracy.

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