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Combining Sterile Neutrino Fits to Short Baseline Data with IceCube Data

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A model with an eV-scale sterile neutrino fits the world's short-baseline data significantly better than the standard three-neutrino framework. Yet significant tension exists between appearance and disappearance oscillation experiments in this model. Recent work has shown that allowing the heavy neutrino to decay reduces this tension and is preferred over the stable four-neutrino scenario. Including IceCube, which is unique in that it exploits the fact that matter effects enhance sterile to active conversion, alters the allowed regions and tension in these global fits. In this talk, I will present the latest global-fit results of the 3+1 sterile neutrino model, as well as the case with decay.

Summary

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