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Sterile Neutrinos: A Possible Explanation for Oscillation Excesses

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Neutrino oscillations have provided proof of the existence of massive neutrino states. The standard model currently accepts the existence of three different neutrinos, but oscillation experiments such as LSND and MiniBooNE have detected an excess of neutrinos above that expected from a standard 3 neutrino model. We will discuss this excess, and explain how an explanation could lie in the existence of additional, sterile (non-interacting), neutrino states. We will then present the latest results in our constraints for the parameters space of sterile neutrinos given the global data on oscillations.

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