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Spinor-vector duality and sterile neutrinos in string derived models

Thursday 29 November 2018 11:15 (35 minutes)

The MiniBooNE collaboration recently reported results that support the existence of sterile neutrinos in nature. In the talk I will discuss the incorporation of sterile neutrinos in string derived models. While large volume string-brane scenarios may naturally accommodate sterile neutrinos, they are much harder to reconcile with the high scale heterotic-string GUT models. I will argue that accommodating sterile neutrinos in heterotic-string GUT models necessitates the existence of an extra Abelian gauge symmetry, not far removed from the TeV scale, under which the sterile neutrinos are chiral. Constructing heterotic-string models that allow for the required extra U(1) is not straightforward, because the required symmetries are usually anomalous in the string derived models and hence must be broken at high scale. I will describe the construction of one such model that utilises the recently discovered spinor-vector duality to maintain the U(1) symmetry anomaly free.

Content of the contribution

Theory

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