Dirac Neutrino Masses in NCG

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Abstract: Several models in noncommutative geometry (NCG) with mild changes to the standard model are introduced to discuss the neutrino mass problem. We use two constraints, Poincaré duality and gauge anomaly free, to discuss the possibility of containing right-handed neutrinos in them. Our work shows that no model in this paper, with each generation containing a right-handed neutrino, can satisfy these two constraints at the same time. So, to consist with neutrino oscillation experiment results, maybe fundamental changes to the present version of NCG are usually needed to include Dirac massive neutrinos.

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