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Spontaneous CP violation in A4xSU(5) with Constrained Sequential Dominance 2

Wednesday 22 May 2013 15:00 (25 minutes)

We revisit a two right-handed neutrino model with two texture zeros, namely an indirect model based on A4 with the recently proposed new type of constrained sequential dominance (CSD2), involving vacuum alignments along the (0,1,-1)^T and (1,0,2)^T directions in flavour space, which are proportional to the neutrino Dirac mass matrix columns. In this paper we construct a renormalizable and unified indirect A4xSU(5) model along these lines and show that, with spontaneous CP violation and a suitable vacuum alignment of the phases, the charged lepton corrections lead to a reactor angle in good agreement with results from Daya Bay and RENO. The model predicts a right-angled unitarity triangle in the quark sector and a Dirac CP violating oscillation phase in the lepton sector of delta approximately 130 degrees, while providing a good fit to all quark and lepton masses and mixing angles.

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