

Neutrino self-interaction in the signals from blazar TXS 0506+056

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Even though conventional leptonic or lepto-hadronic models of blazar successfully explain the observed electromagnetic component of the flaring signal from the Blazar TXS 0506+056 in a large range of energy window $E_\gamma \in (10^{-1} \text{ eV}, 10^2 \text{ GeV})$, the predicted neutrino flux is too small to be consistent with the IceCube observation at $E_\nu \simeq 300 \text{ TeV}$. We show that a sizable self-interaction of neutrinos with a light messenger resolves the discrepancy. Interestingly, the same physics can relieve the cosmological tension in H_0 and σ_8 .

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