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Constraining non-standard neutrino interactions with cosmology

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Neutrinos are ubiquitous in cosmology and play a significant rule throughout the history of the Universe. As a result, cosmological observations offer a unique opportunity to test the properties of neutrinos. Standard model neutrinos are expected to freestream ever since they decouple from the primordial plasma in the early Universe. There are however multiple feasible particle physics scenarios in which neutrinos can interact efficiently at (much) later times. In this talk, I explore these scenarios and discuss how they can be constrained using CMB and LSS observables. I demonstrate that there is a *redshift window* in which neutrinos cannot interact significantly given the Planck CMB data. Finally, I discuss how the constraints can improve with future CMB Stage-IV and galaxy clustering data.

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