

PARTICLE PHYSICS SEMINAR SERIES

Dark Neutrino interactions phase out the Hubble tension (.. also make gravitational waves blue)

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4:00 pm - Rm 415 NSH

New interactions of neutrinos can stop them from free streaming even after the weak interaction freezeout. This results in a phase shift in the cosmic microwave background (CMB) acoustic peaks which can alleviate the Hubble tension. We demonstrate with Planck CMB and WiggleZ galaxy survey data that this acoustic phase shift, and thus solution to the Hubble tension, can be achieved for neutrinos interacting with dark matter without significantly affecting other observables and without changing the number of relativistic degrees of freedom. We predict potentially observable modifications of the CMB B-modes and matter power spectrum.



PHYSICS