Contribution ID : **35** Type : **not specified**

Are current neutrino mass constraints reliable? insights from full shape

Content

Cosmological findings from the combination of DESI and Planck data have placed very tight constraints on the total neutrino mass within the ΛCDM model, leading to tension with particle physics experiments. Based on full-shape analyses of (e)BOSS data, we show that the neutrino mass signal is highly sensitive to background effects, clouding the reliability of its measurement. However, by disregarding the background and focusing on the effect of structe suppression, we discover that most of the neutrino information is derived from the amplitude of the wiggles, rather than the broadband suppression of the power spectrum, as has been believed for many years. This insight offers a promising pathway for robustly extracting the neutrino signal. This work is mainly based on arxiv: 2407.06117

Tipo de presentación

Póster

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