

Cosmological constraints on neutrino properties with Euclid in beyond LambdaCDM models

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One of the primary goals of future galaxy and cosmic shear surveys such as the Euclid mission is to study dark energy and modified gravity models beyond LambdaCDM, shedding light on the nature of the late acceleration of the Universe. These observations will also be crucial to measure the absolute neutrino mass scale and constrain the effective number of neutrino species.

Cosmological constraints on the sum of neutrino masses are model-dependent and usually much tighter for LambdaCDM than in its extensions.

With currently available cosmological datasets, we study these constraints and degeneracies between the neutrino sector and cosmological parameters in beyond LambdaCDM models. Furthermore, we provide a glimpse of the future capabilities of the Euclid survey in the measurement of neutrino properties and the impact of the cross-correlation between the Euclid main probes with the cosmic microwave background, in inferring neutrino masses in modified gravity models.

Poster prize

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