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Testing the Quasi-Static and Sub-Horizon Approximations in Horndesky Theories.

Thursday 13 November 2025 09:00 (25 minutes)

In the framework of Horndesky theories, we evaluate the validity and consistency of the Quasi-Static and Sub-Horizon Approximations (QSA–SHA) in the study of cosmological perturbations. By applying these approximations, we determine the corresponding gravitational potentials and compare them with the results obtained from standard perturbative treatments. This analysis allows us to identify the leading 0 order $\mathcal{O}(0)$ terms that dominate the dynamics on large scales, providing the necessary conditions for accurate numerical integrations within modified gravity scenarios.

Authors: GARCIA SERNA, SANTIAGO; ORJUELA-QUINTANA, JOHN BAYRON (UNIVERSIDAD DEL VALLE); VALENZUELA-TOLEDO, Cesar A. (Departamento de Física, Universidad del Valle)

Presenter: GARCIA SERNA, SANTIAGO