

The full-sky Spherical Fourier-Bessel power spectrum in general relativity

Tuesday, 14 May 2024 12:22 (5 minutes)

We present a full methodology for analyzing galaxy clustering on the lightcone with the 2-point correlation in the Spherical Fourier-Bessel (SFB) formalism. SFB is a natural choice to account for all wide-angle and relativistic (GR) effects, allowing to efficiently extract information from large volume galaxy surveys.

We extend previous studies using SFB by including all projection and GR effects, developing an efficient numerical implementation that avoids the use of the Limber approximation and includes multi-bins correlations and a full non-diagonal covariance.

We investigate the impact of neglecting GR corrections in cosmological parameter constraints, focusing on Primordial Non-Gaussianity and bias parameters.

We also present a novel prescription for multi-bin correlations that allow to significantly boost the detectability of GR effects, opening a new window on general relativity testing.

Would you be interested in presenting a poster? (this will not impact the decision on your talk)

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