Contribution ID: **86** Type: **not specified**

Modeling bispectrum in redshift space from perturbation theory

Tuesday 29 November 2016 14:40 (20 minutes)

The observed galaxy clustering in redshift space, in nature, appears to be anisotropic due to the redshift-space distortion effects. This anisotropic clustering offers an interesting opportunity to probe gravity on cosmological scales. While the redshift-space distortion of galaxy clustering have been quantified and characterized by the two-point statistics, higher-order statistics such as bispectrum are also powerful measure for anisotropies, and combining the bispectrum with power spectrum, cosmological constraint will be further improved. In this talk, I will present a theoretical model of redshift-space bispectrum and quantify its validity by comparing N-body simulation. For an accurate theoretical template, we calculate bispectrum in redshift space based on perturbation theory up to next to leading order. In addition, we also consider relevant prescription for non-perturbative damping effect from the redshift-space distortion. Comparing with N-body simulations makes clear that our theoretical model works well in the quasi non-linear regime.

Summary

I will present a improved theoretical model of bispectrum in redshift space based on perturbation theory. I will also explain the validity of our model by comparing N-body simulation.

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Session Classification: Cosmic microwave background and Large Scale Structure