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Ms. JENNINGS, Elise (Durham University): Predictions for large-scale structure in future galaxy redshift surveys

Thursday, 16 September 2010 15:00 (15 minutes)

Forthcoming galaxy redshift surveys will make high precision measurements of the clustering of galaxies on scales in excess of 100/h Mpc. In particular, the quantification of the distortion of clustering due to the peculiar motions of galaxies and the scale of characteristic features in the galaxy distribution have been proposed as tests of the cosmic acceleration. To obtain robust constraints on dark energy, we need to understand any systematic effects which cause deviations from linear
perturbation theory which is commonly appplied on these scales. I will present the predictions for BAO and redshift space distortions using large volume N-body simulations which demonstrate that linear theory is not sufficient to model future surveys. These calculations include the first consistent simulations of quintessence dark energy models. Some of these models cannot be distinguished from LCDM using BAO alone. I will also describe a procedure for analysing redshift-space distortions in a range of cosmologies which is a major improvement over linear theory.

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