Theory Seminar

Monday, September 13, 2010 2:10 PM 831 Pupin Hall

Clustering and velocities of dark matter halos as probes of primordial non-Gaussianity

Deviations from Gaussianity of the initial seed perturbations offer an interesting window on the very early Universe. Interestingly, large-scale structure, in particular the clustering of dark matter halos and their tracers such as galaxies, promises to be one of the most sensitive probes of this primordial non-Gaussianity. I will discuss different approaches to deriving the effect on halo clustering for general quadratic non-Gaussianity, in particular local biasing and the peak-background split, which make different sets of assumptions, and then show that, under certain conditions, they are equivalent in the large-scale limit. I will also discuss the previously neglected effect of non-Gaussianity on the velocities of halos, which are observable for example through redshift distortions.

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