Abstract

Observed galaxy powerspectrum is necessary to fit and calibrate the parameters of the halo model powerspectrum. To calculate the observed powerspectrum we use the Baryon Oscillation Spectroscopic Survey (BOSS) CMASS and LOWZ Data Release 12 combined sample, which consists of $850,364$ galaxies over the redshift range $0.2 < z < 0.75$. We divide our sample into redshift bins of $\Delta z =$ to maximize the number of redshift bins while keeping that the effects of cosmic variance below (quote some number).

Furthermore, in calcuating the galaxy powerspectrum we use the fiber collision correction method described in Hahn et al. (in prep), which accounts for systematic effects in the shot noise correction term of the powerspectrum estimator and statistically reconstructs the small scale clustering by modeling the line-of-sight displacement of fiber collided pairs. Using the correction method, we reduce the effect of fiber collisions to $<$ %1 over the $k < 0.82$ h/Mpc. Combining the cosmic variance estimates from simulated mock catalogs with uncertainty contributions from systematic effects, we present observed powerspectrum measurements with uncertainties of $<$ somenumber.

1 BOSS Galaxy Sample

- Describe CMASS LOWZ combined sample DR 12
- Describe systematic effects here

2 Powerspectrum

2.1 Estimator

- Describe revised FKP estimator to account for systematics in BOSS galaxy sample

2.2 Fiber Collision Correction

- Describe, briefly, the fiber collision correction method of Hahn et al. (in prep.)
- Present fiber collision corrected P(k) for entire combined sample? just CMASS? two bin combined sample?

2.3 Redshift Binning

- Describe the motivation for narrow redshift binning
- Describe observational challenges of narrow redshift binning
- Descirbe final redshift binning and cosmic variance modeling using nseries mocks