References

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ABSTRACT

This is a summary of our research related papers. ApJ styled reference is created for tex practice.

1. BAO

1.1. Review

Dark Energy and Cosmic Sound (Eisenstein 2005, eisenstein05b, #15 4/21/10)

1.2. SDSS

- ★★★ Detection of the Baryon Acoustic Peak in the Large-Scale Correlation Function of SDSS Luminous Red Galaxies (Eisenstein et al. 2005, eisenstein05a, #1054 4/21/10)
  First Detection of BAO peak is reported here. $\Omega_m = 0.273 \pm 0.025 + 0.123(1+w_0) + 0.137\ \Omega_k$

- Baryon acoustic oscillations in the Sloan Digital Sky Survey Data Release 7 galaxy sample (Percival et al. 2010, percival10a)
  In ΛCDM, $\Omega_m = 0.288 \pm 0.018$, and in wCDM, w=-0.97 ± 0.11.

2. Cluster of Galaxies

2.1. Review

- Cosmology with Clusters of Galaxies (Bahcall 2000, bahcall00a, #16 4/21/10)
  In abstract, it states : "Rich clusters of galaxies, the largest virialized systems known, place some of the most powerful constraints on cosmology". Questions to answer: 1) What is the mass density of the universe? 2) How is the mass distributed?

  – Cluster Dynamics and M/L

  - * **Velocity Dispersion** : motion of galaxies within clusters reflect the dynamical cluster mass within a given radius assuming the clusters are in hydrostatic equilibrium.
  - * **Temperature of the hot intracluster gas** : traces the cluster mass.
  - * **Weak Lensing** : distortion of background galaxies can be used to directly measure the intervening cluster mass.

  $\Omega_m \simeq 0.2 \pm 0.1$ from the integration of over the entire observed luminosity of the universe.

- Baryon Fraction
  The baryon fraction observed in clusters is :
- Cluster Abundance Evolution

2.2. M/L

3. Galaxy Power Spectrum

3.1. 2dFGRS : 2 degree Field Galaxy Redshift Survey

- Parameter constraints for flat cosmologies from cosmic microwave background and 2dFGRS power spectra (Percival et al. 2002, percival02a, #217 4/21/10)
  Joint analysis of the power spectrum from 2dFGRS and CMB. CMB is COBE+BOOMERaNG, Maxima, DASI, VSA and CBI, this is before WMAP time. Ω_mh degeneracy is discussed and 2dFGRS tries to break the degeneracy. $\Omega_m h^{3.4}$ = constant.

- ★★★ The Three-Dimensional Power Spectrum of Galaxies from the Sloan Digital Sky Survey (Tegmark et al. 2004, #779, 5/3/10, tegmark04a)
  The large-scale real-space power spectrum P(k) by using a sample of 205,443 galaxies from the Sloan Digital Sky Survey, covering 2417 effective square degrees with mean redshift z$\sim$0.1. Ω_mh=0.213$\pm$0.023, and σ_8=0.89$\pm$0.02 for L^* galaxies, when fixing the baryon fraction Ω_m/ Ω_b=0.17 and the Hubble parameter h=0.72.

- The Three-dimensional Power Spectrum from Angular Clustering of Galaxies in Early Sloan Digital Sky Survey Data (Dodelson et al. 2002, dodelson02a, #114 4/21/10)
  $\Gamma = 0.14^{+0.11}_{-0.06}$ (Ω_mh)

- The 2dF Galaxy Redshift Survey: the power spectrum and the matter content of the Universe (Percival et al. 2001)
  Ω_mh = 0.20 $\pm$ 0.03 (note not h^2) and Ω_m/ Ω_b=0.15 $\pm$ 0.07.

4. Gravitational Lensing : Time Delay

- Cosmological Constraints from Gravitational Lens Time Delays (Coe & Moustakas 2009, coe09a) Forecast of TD (Time delay) lenses for LSST with a Planck prior. with $\sim$ 4000 lenses, the local Hubble constant h, $\Omega_\Lambda$and w are constrained in 1% level.

5. Big Bang Nucleosynthesis

5.1. Observation

5.1.1. D/H

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