

Baryon Acoustic Oscillations: A Robust and Precise Route to the Cosmological Distance Scale

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Abstract:

I will discuss how the acoustic oscillations that propagate in the photon-baryon fluid during the first million years of the Universe provide a robust method for measuring the cosmological distance scale. The distance that the sound can travel can be computed to high precision and creates a signature in the late-time clustering of matter that serves as a standard ruler. Galaxy clustering results from the Sloan Digital Sky Survey reveal this feature, giving geometric distances to a wide range of redshifts and producing an accurate measurement of the abundance of dark energy.

I will review our recent work on the theory and practice of the acoustic oscillation method and our latest cosmology results from SDSS-III on the expansion history of the Universe.

3:15 pm

Refreshments
CAS Room 500

3:30 pm

Seminar
CAS Room 502

Next Week

- *Mark Heyer*
UMass
- Revisiting Larson's 1981
Scaling Relationships in
Galactic Molecular Clouds

