

JOINT TUFTS/MIT COSMOLOGY SEMINAR

Combining Probes of Large-Scale Structure in the Precision Cosmology Era

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Current large-scale structure (LSS) surveys aim to determine the composition of the Universe and the nature of dark energy by mapping the spatial distribution and shapes of hundreds of millions of galaxies. These data sets will enable precision measurements of various observables of LSS, such as weak lensing, galaxy clustering, and the abundance of galaxy clusters. These observables probe different aspects of cosmic structure formation, and combining them improves constraints on cosmology significantly. In this talk I will give a pedagogic introduction to LSS observables and describe the analysis concepts for the combined analysis currently under development for the Dark Energy Survey. In particular, I will discuss systematic uncertainties and cross-correlations of observables, present first results from the Dark Energy Survey and outline extensions of these methods to future data sets.

Tuesday, February 4, 2014, 2:30 pm
Cosman Seminar Room
Center for Theoretical Physics
Building 6C, Room 6C-442
Massachusetts Institute of Technology
Refreshments at 2:00 in the same room