

Cosmology with Galaxy Clusters

The observed number of galaxy clusters provides a sensitive probe of the structure of the Universe by measuring the evolution of the halo mass function. However, already current cluster surveys are systematically limited by uncertainties in the relation between cluster mass and observables (e.g. the number of galaxies, X-ray luminosity, or the imprint on the Cosmic Microwave Background). I will discuss the challenges in determining mass-observable relations, and how the combination of multi-wavelength observations, including weak gravitational lensing, can address these. I will summarize current cluster cosmology results for the different selection techniques, including some of the tightest constraints on the dark energy equation of state from a single probe, and will comment on the role of projection effects for optically selected cluster samples. I will conclude with an outlook towards cluster cosmology with upcoming sky surveys, especially with Rubin/LSST.

**Monday, April 14th**

2:30 - 3:30 p.m.

725 Commonwealth Ave | Room 502

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