

Using galaxies to understand weak lensing

Friday, 16 August 2013 17:06 (24 minutes)

Weak lensing measurements are expected to be powerful probes of the physics of the dark sector. While the shear component of the lensing distortion has been detected and analyzed in several studies to date, the magnification component has received relatively little attention. We will show how an understanding of galaxy-scale physics can be used to dramatically improve both the systematic and statistical errors from forthcoming weak lensing measurements. We will show how combined shear and magnification measurements will permit substantial improvements in the constraints on dark energy physics achievable by surveys such as the Dark Energy Survey.

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Session Classification: Cosmic Frontier

Track Classification: Cosmic Frontier