

Physics & Astronomy Colloquium

Presents



Alexie Leauthaud

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Thursday, March 18, 2021
4:10 pm via Zoom

*Meet the speaker at 3:30 pm, join us in welcoming
the speaker and for an informal chat!*

“The Galaxy-Halo Connection from Gravitational Lensing”

I will begin this talk with an overview of galaxy-galaxy lensing and how it informs us about the connection between galaxies and their dark matter halos. I will then present a variety of new results in this field. First, I will discuss the “lensing is low” effect whereby the lensing signal around massive galaxies has a lower amplitude than predicted based on the galaxy auto-correlation function from BOSS. I will present some new updates on this topic and discuss the cosmological implications of this effect. I will further present “Lensing without Borders”, an inter survey collaborative effort to empirically test the accuracy of galaxy-galaxy lensing measurements in current day surveys. I will also present new results suggesting that the light from central galaxies is a much better tracer of halo mass than previously recognized and I will discuss how this effect might be used to improve optical cluster finding algorithms. Finally, I will present the Merian survey: a new program that will use 60 nights on the Blanco telescope and two custom made filters to detect 100,000 dwarf galaxies and measure their halo masses via gravitational lensing.

Host: Dr. Guy Worthey

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