



PHYSICS COLLOQUIUM: Chasing cosmic acceleration with galaxies

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About The Speaker:

I am a research scientist at SLAC National Accelerator Laboratory, studying dark energy and gravity using large-scale galaxy surveys. After earning my PhD from Université Paris-Sud, I began studying the Universe through galaxy surveys, mainly the Dark Energy Survey, during my postdoctoral work at the Royal Observatory, Edinburgh, and further advanced this research at the Jet Propulsion Laboratory in Pasadena, CA. More recently, I have been participating in the effort ensuring the quality of data from the Vera C. Rubin Observatory and in designing some of the most precise tests of gravity at cosmic scales.



Abstract:

The origin of cosmic acceleration remains an open question: is it caused by a dark energy and if so, what are its properties? Or is our theory of gravity incomplete on the largest scales? These questions have driven an ambitious effort from the cosmology community to develop wide galaxy surveys. I will first explain how galaxies are indeed a powerful way to test cosmology, focusing on the weak lensing effect. I will then present the latest results I contributed to on our understanding of the Universe from the Dark Energy Survey (DES), which produced the largest weak lensing catalog to date. The methods and results the DES collaboration has developed over the past decade set the scene for the new generation of galaxy surveys such as the LSST by the Vera C. Rubin Observatory. I will update on the status of the Rubin Observatory and end with the challenges we will need to solve to test dark energy and gravity with its future weak lensing measurements.

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Time:
10:30 AM – 11:50 AM

Location:
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