PHYSICS SEMINAR:
Dr. Daniel Gilman
University of Chicago

Date:
11/03/2023

Time:
10:30 AM - 11:20 AM

Location:
GRAN 135

Abstract:

The existence of dark matter explains astrophysical phenomena from sub-galactic length and mass scales to the properties of the CMB and large-scale structure. However, we lack a detailed understanding of the particle properties of dark matter, such as its mass, formation mechanism, and possible self-interactions. Strong gravitational lensing provides a purely gravitational means to constrain the particle nature of dark matter through inferences of the properties of dark matter halos. I will discuss how various particle dark matter models affect the abundance and internal structure of dark matter halos, and how we can use strong gravitational lenses observed by HST and JWST to test these predictions on sub-galactic scales.

About The Speaker:

I am currently a Brinson Fellow at the University of Chicago studying dark matter by detecting concentrations of dark matter, objects referred to as halos, around distant galaxies using the phenomenon of strong gravitational lensing.. Prior to this, I was a Schmidt AI in Science Fellow and postdoctoral researcher at the University of Toronto. I received my bachelors degree in physics from James Madison University, and PhD in physics from UCLA.

For more information, contact: Anna Nierenberg
anierenberg@ucmerced.edu