



High Energy Physics Lunch Seminar

Andrew Hearin

Argonne National Laboratory

"AI-Accelerated Discovery of Dark Energy Physics with LSST, DESI, and CMB-S4 Cross Correlations"

Host: Katrin Heitmann

Tuesday, January 12, 2021 –12:00pm -12:40pm

<https://bluejeans.com/831849230>

Phone Dial-in: +1.866.226.4650 (US Toll Free)

Meeting ID: 831 849 230

Abstract:

This is a seminar to discuss an early career proposal for AI-Accelerated Discovery of Dark Energy Physics with LSST, DESI, and CMB-S4 Cross Correlations.

The next generation of cosmic microwave background (CMB) experiments will discover over 100,000 distant galaxy clusters, opening a new window into the high-redshift universe and the behavior of Dark Energy. With these new discoveries come new challenges; I propose an ambitious experimental- and simulation-based program that will maximize the cosmological utility of this new data set. This program focuses on two key areas: (1) a multiwavelength characterization of CMB-selected clusters to robustly model cluster selection and mass calibration and (2) leveraging this well-characterized sample to improve constraints from clusters selected across all wavelengths, particularly focusing on enhancing the joint constraining power of clusters from the LSST, DESI, and CMB-S4 surveys.

The HEP Lunch Seminar Schedule can be viewed at:

<https://indico.fnal.gov/event/47138/>