ASTROPHYSICS SEMINAR SERIES

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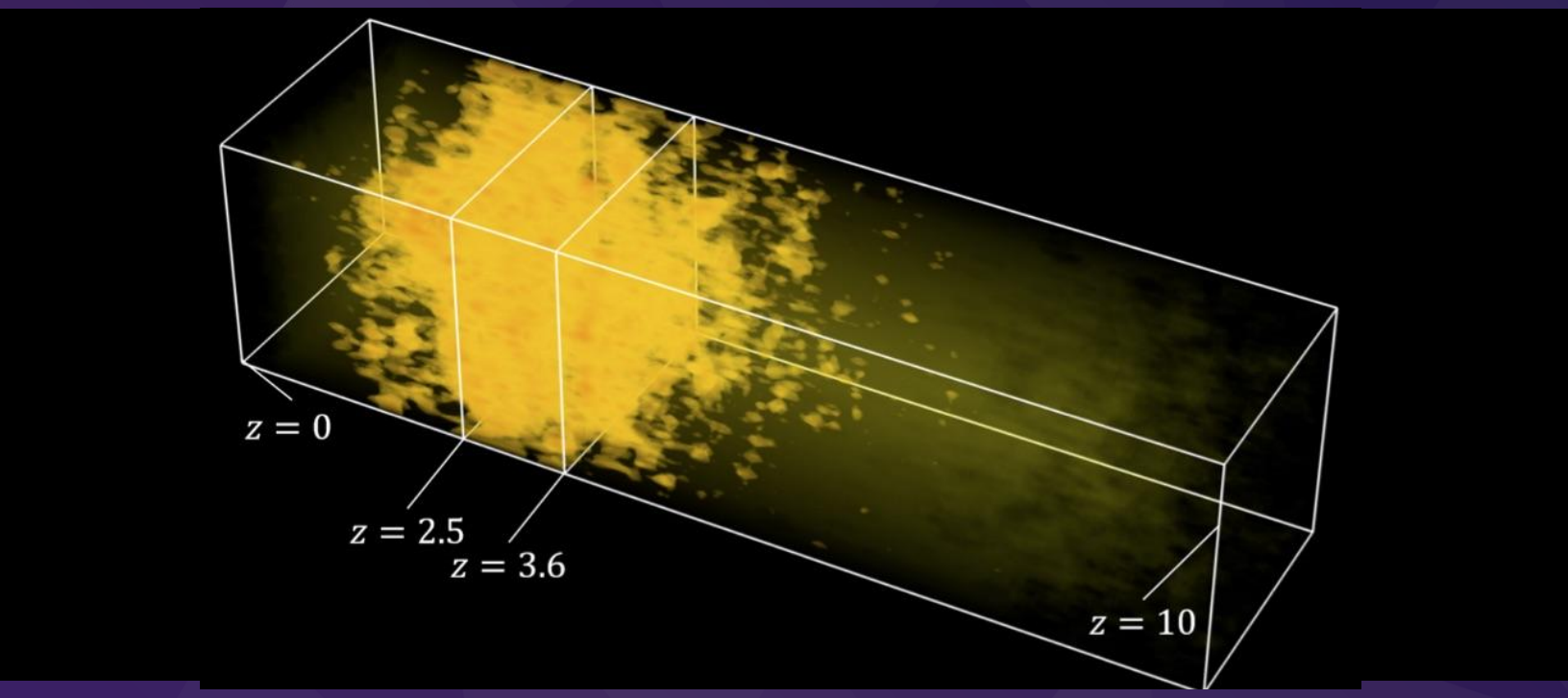

Line Intensity Mapping: Modeling & Analysis in the Precision Era

ANTHONY PULLEN | *NYU*

In this talk I discuss our efforts to increase the precision of modeling and analysis for upcoming line intensity mapping (LIM) science. LIM probes the physics of galaxies and large-scale structure (LSS) by mapping the aggregate line emission of star-forming galaxies and the intergalactic medium, which is much faster than traditional observations of individual galaxies. While previous efforts have been focused on detecting LIM candidates in the diffuse background due to LSS, current and upcoming surveys seek to use LIM to probe galaxy physics and cosmology, requiring accurate line emission models and precise analysis tools. I will first give an introduction to LIM and its applications. Next, I will present our work constructing realistic, multi-line LIM mocks and predicting how they can improve LIM galaxy and cosmology science. I will also discuss EXCLAIM, an LIM survey that maps CO and [CII] emission, as well as how our LIM mocks will be used to meet EXCLAIM's science goals. Finally, I will discuss using line intensity maps to probe gravity and inflation over extremely large scales.

27 OCT 2020 **3:30 PM** **YouTube LIVE**