Abstract Submitted
for the MAS14 Meeting of
The American Physical Society

Bridging the gap between theory and observations of galaxies across cosmic time YUEXING LI, Penn State, LARS HERNQUIST, Harvard, MARK VOGELSBERGER, MIT, VOLKER SPRINGEL, Heidelberg Institute for Theoretical Studies — A major recent milestone in observational cosmology is the detection of a large number of galaxies and quasars across cosmic time through multi-wavelength surveys. In order to interpret the wealth of data and to understand the origin and destination of these objects, a comprehensive model which fully accounts for the formation, evolution and multi-band properties of structures is imperative. However, despite the strong observational push, theoretical modeling in this field has lagged behind. Here, I report the Illustris radiative transfer project, which performs comprehensive radiative transfer calculations on the Illustris Simulation, the largest and most sophisticated cosmological simulation to date, to investigate the multi-band properties of galaxies and quasars from the cosmic dawn to the present day. I will present new results on the cosmic reionization, the origins of extragalactic background lights, and detectability of the first galaxies with the next generation instruments such as JWST and ALMA.

Cody Messick
Penn State University

Date submitted: 27 Aug 2014 Electronic form version 1.4