

Nick Battaglia

My research background is in observational cosmology, mostly focussed on topics related to secondary anisotropies in the cosmic microwave background (CMB, e.g., using the CMB as backlight). With these secondaries I have worked on: galaxy clusters both from a cosmological and astrophysical perspective; cross-correlations with large-scale structure including measuring the thermal and kinetic Sunyaev-Zeldovich effects; the epoch of reionization developing quick, large-scale reionization models and CMB observables; higher order statistics of secondary anisotropies and their cosmological and astrophysical information. The scope of my research spans theory to observations. This includes developing new models, simulations, and statistical estimators, analyses and interpretation of observations, and making new measurements from various cosmological surveys. In addition to cosmology and large-scale structure, lately I have been interested in circumgalactic medium (CGM) and new probes of the CGM.

For this meeting, my interests overlap with Fast Radio Bursts (FRB) through the use of them as backlights to illuminate the free electrons between us and the FRB sources.

Educational/Professional Background:

BSc McGill University 2006, Phd University of Toronto 2011 (Adviser: J. R. Bond), McWilliams Postdoctoral Fellow Carnegie Mellon University 2011 - 2014, Lyman Spitzer Fellow Princeton University 2014 - 2017, Associate Research Scientist Flatiron Institute Center for Computations Astrophysics 2017 - 2018 (Deferred Cornell University Position), Assistant Professor Cornell University 2018 - present.