

Tuesday

December 9

12:30 P.M.

Rm 184 NSH

The Circumgalactic Medium in 2D: from Lineland to Flatland

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The environments extending several hundred kiloparsecs from galaxies contain the fuel that feeds galactic star formation, and act as the reservoir into which ejecta from stellar and AGN feedback are driven. Observations of the cool hydrogen and metal content, kinematics, and morphology in these regions (i.e., the circumgalactic medium, or CGM) can therefore provide incisive tests of our understanding of these processes. Focusing at $z \sim 2$, I will briefly discuss current constraints on the content of the CGM around massive, $>L^*$ galaxies. I will then describe a new technique that pinpoints much fainter, sub-luminous systems at $z \sim 2$, allowing us to probe the gas in their surroundings in absorption toward background QSOs. This technique has the added benefit of tracing the kinematic coherence of this material over >100 kpc scales. I will also discuss prospects for new constraints on the sizes of CGM absorbers, and provide a first glimpse into the small-scale distribution of this diffuse material. Such measurements represent important steps toward a complete, detailed empirical picture of the CGM.