The CGM of nearby galaxies and the second halo

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Abstract

Using a sample of nearly half a million galaxies, intersected by over 8 million lines of sight from the Sloan Digital Sky Survey Data Release 12, we trace Hα + [NII] emission from a galactocentric projected radius, r_p, of 5 kpc to more than 100 kpc. I will present an extension of this published work where we identify an inflection in the radial profile of the Hα+N[II] radial emission profile at a projected radius of $\sim$ 50 kpc and suggest that beyond this radius the emission from ionized gas in spatially correlated halos dominates the profile. I will explore this hypothesis using results from a highly simplified theoretical treatment in which the dark matter halo distribution from cosmological simulations is straightforwardly populated with gas.

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