Specific Angular Momentum Distribution of Disk Galaxies Ji Hoon Kim^{1,2}

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We investigate the correlations between the environment and the specific angular momentum of disk galaxies. The formation of low surface brightness galaxies (LSBGs) which have been providing an intriguing testbeds to test the nature of dark matter and gravity due to their unique characteristics is not well studied. The simplest, but currently favored scenario states that the difference of LSBGs from the high surface brightness galaxies results from the difference of specific angular momentum of host dark matter halos based on the current standard galaxy formation picture; the specific angular momentum, j (angular momentum per unit mass), of the pre-collapse gas is generally assumed to be equal to that of the dark matter, which is acquired by the tidal interactions with the surrounding matter distribution at its proto-halo stage. Based on broadband photometry data from Simard et al. (2011), we investigate the correlation between the environment of disk galaxies and their central surface brightnesses in order to shed light on the formation of disk galaxies and its dependence on the large scale structure.