X24a Luminosity Function and Clustering from ~ 4 Million Star Forming Galaxies at $z \sim 2-7$

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We present our latest work for statistical properties of 4 million star-forming galaxies at $z \sim 2-7$. The galaxy sample contains $\sim$2 million Lyman break galaxies at $z \sim 4-7$ over the 300 deg^2 sky ($\sim$4 Gpc^3 survey volume) identified in the Subaru/Hyper Suprime-Cam survey, significantly larger than previous studies. The selected galaxies clearly show an excess of the number density from the Schechter form of the UV luminosity function at the bright end ($M_{\rm UV} < -23$), more consistent with the double power-law function, which indicates inefficient mass quenching and/or low dust obscuration compared to low-redshift galaxies. Combined with $\sim$2 million star-forming galaxies at $z \sim 2-3$ selected with the CLAUDS u-band data, we have investigated clustering properties of galaxies at $z \sim 2-7$ using the halo occupation distribution model. Our clustering analysis indicates that the baryon conversion efficiency (the star formation rate divided by the dark matter accretion rate) is almost constant at $z \sim 4-7$ but gradually increases from $z \sim 4$ to 2, which quantitatively reproduces the observed cosmic star formation rate density (a.k.a. the Madau plot).