



Figure 3. Mean intensities of $H\alpha$, $[OIII]$, $[OII]$, and $H\beta$ lines at $z < 5$, with no correction for dust extinction applied. The colored points are derived from observed LFs (Ly et al. 2007; Bayliss et al. 2011; Sobral et al. 2013, 2015; Khostovan et al. 2015). The gray crosses show the results from the simulations in Guo et al. (2013). The blue dashed curves with blue bands give the results of the SFRD in Hopkins & Beacom (2006) for mean intensities and uncertainties. For comparison, the light blue dashed-dotted and dotted curves denote the results with errors from the SFRD given by Madau & Dickinson (2014). We find the results from the three methods (i.e., LFs, SFR simulations and observed SFRD) are basically consistent with one another at the 1σ C.L.