(shallower) than what we have proposed here; this seems too extreme.

• The maximum baryon mass fraction of blue and red galaxies are $f_{\rm b} = 0.028^{+0.018}_{-0.011}$ and $f_{\rm b} = 0.034^{+0.025}_{-0.014}$, respectively, much smaller than $f_U = 0.167$ in both cases, and these maxima are attained at $M_{\rm h} \approx 10^{12}\ M_{\odot}$. At large masses $f_{\rm b}$ decreases approximately as $f_{\rm b} \propto {M_{\rm h}}^{-0.5}({M_{\rm b}}^{-0.8})$ for blue galaxies and as $f_{\rm b} \propto {M_{\rm h}}^{-0.6}({M_{\rm b}}^{-1.5})$ for red galaxies, in such a way that from $M_{\rm h} \approx 5 \times 10^{12}\ M_{\odot}$ on, blue galaxies have on average slightly larger values of $f_{\rm b}$ than red ones. At low masses, the $f_{\rm b}$ of red galaxies strongly decreases as the mass decreases $f_{\rm b} \propto {M_{\rm h}}^{2.9}({M_{\rm b}}^{0.8})$, while for blue galaxies, due to the increasing gas fractions the smaller the mass, $f_{\rm b}$ decreases more slowly than $f_{\rm s}$, as $f_{\rm b} \propto {M_{\rm h}}^{0.7}$ $(\propto {M_{\rm b}}^{0.4})$.

The AM technique has been revealed as a relatively simple but powerful method for connecting empirically galaxies to dark halos. Here we extended this technique towards inferences for the blue and red galaxy sub-populations separately. By introducing a minimum of assumptions –otherwise the method becomes close to a semi-analytical model– we have found that the stellar and baryon mass-halo mass relations of blue and red galaxies do not differ significantly among them and from the overall ones. The maximum differences occur around the peak of these relations, $M_{\rm h} \approx 10^{12}\ M_{\odot}$, and are consistent qualitatively with the inference that the galaxies in these halos are transiting from an active to a quiescent regime of $M_{\rm s}$ growth (FA10). Those that transited recently did so because they had an efficient process of gas consumption into stars and further cessation of $M_{\rm s}$ growth; therefore, they should be redder and have higher $f_{\rm s}$ values than those that have not transited. For larger and smaller masses than $M_{\rm h} \approx 10^{12}\ M_{\odot}$, the differences decrease and even invert, something that is also consistent with the inferences by FA10, based on the semi-empirical determinations of the evolution of the overall $M_{\rm s}$–$M_{\rm h}$ relation.

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