Finally, the standard $\pm 1\sigma$ deviation intervals that we have obtained from the AMT are reproduced in Figure 8 for central blue and red galaxies (solid blue and red curves connected by vertical lines, respectively). Note that in the determinations with direct methods, the systematic uncertainty in $M_{\rm s}$, which is the main source of error in the AMT, was not taken into account.

Our inference for early-type (red) galaxies is consistent (within the uncertainties, errors, and different ways of presenting the constraints) with the weak lensing results of Mandelbaum et al. (2006) and Schulz et al. (2010), and with the galaxy group analysis of Yang et al. (2007) as reported in More et al. (2011), for all the masses reported in each one of these papers. With respect to the satellite kinematics analysis by More et al. (2011), their mean halo masses for $M_{\rm s} \sim 5 \times 10^9 - 10^{11}\ M_\odot$ (for smaller masses their uncertainties are very large) are larger than ours (and those of Mandelbaum et al. 2006) by factors around 2. For larger masses, all determinations agree roughly with our results. In fact, there is some indication that satellite kinematics yields halo masses around low mass central galaxies that are systematically larger than most other methods, specially for red central galaxies (Skibba et al. 2011; but see More et al. 2011 for a discussion).

For late-type (blue) galaxies, our results are in reasonable agreement with those of Mandelbaum et al. (2006) for masses $M_{\rm s} \lesssim 10^{10.8}\ M_\odot$. At higher masses, their results imply halo masses for a given $M_{\rm s}$ smaller than ours, with the difference increasing with increasing stellar mass. The discrepancy would be weaker taking into account that the mean $M_{\rm s}$–$M_{\rm h}$ relation in our case becomes steeper when calculating $M_{\rm h}$ as a function of $M_{\rm s}$. On the other hand, it must be said that the number statistics becomes poor for massive late-type galaxies, resulting in a stacked weak lensing analysis with large error bars. For example, in the two most massive bins in the Mandelbaum et al. (2006) sample (the two uppermost points in Figure 8), only 5 and 11 percent of the galaxies are classified as late types. Future weak lensing work should confirm whether high-mass late-type galaxies do or do not have such relatively small halos as found in Mandelbaum et al. (2006). Regarding the comparison with the satellite kinematics inferences of More et al. (2011), the agreement is reasonable at least up to $M_{\rm s} \approx 10^{11}\ M_\odot$, though the relation inferred by these authors is less curved than ours. For larger masses, these authors caution that their results become very uncertain, as in the weak lensing case, because of poor statistics of massive blue galaxies. The galaxy groups inference (Yang et al. 2007), in the mass range allowed by this technique, gives halo masses slightly smaller than the means of our inference for a given $M_{\rm s}$.

In general, most techniques for inferring the relationship between stellar and halo masses of galaxies agree among them within factors up to 2–3 in $M_{\rm h}$ (BCW10; More et al. 2011; Dutton et al. 2010). This seems to be also the case for samples partitioned into late- and early-type galaxies, as shown here. However, beyond the detailed comparison between our results and those obtained with direct techniques, it seems that there is a systematic qualitative difference: in our case, at a given halo mass (for $10^{11.5}\ M_\odot \lesssim M_{\rm h} \lesssim 10^{13.0}\ M_\odot$), blue centrals, on average, have lower stellar masses than red centrals, while in the case of determinations with direct techniques, the opposite occurs, at least for masses larger than $M_{\rm h} \sim 10^{12}\ M_\odot$ (Mandelbaum et al. 2006; More et al. 2011; see also Figures 5 and 8).

A partial source of bias contributing to this difference could be that in the weak lensing and satellite kinematics techniques the same concentration for halos hosting late- and early-type galaxies is assumed. If halos of late- (early-)type galaxies are less (more) concentrated than the corresponding average, then for the same measure (shear or satellite velocity dispersion), the halo masses are expected to be higher (lower) than the obtained ones. Therefore, the differences found (Mandelbaum et al. 2006 and More et al. 2011) in the mass halos of late- and early-type galaxies of a given $M_{\rm s}$ would decrease or even invert their sense.

While it is difficult to make any robust statement about possible systematics in each technique regarding late and early types, we ask ourselves what should be modified in our assumptions in order to invert the behavior of the $M_{\rm s}$–$M_{\rm h}$ relations with galaxy type (color) obtained here. We have shown in Figure 6 that our corrections to the *HMF* had the effect of bringing the $M_{\rm s}$–$M_{\rm h}$ relations of blue and red galaxies into closer agreement at large masses. One possibility in order not only to bring the relations into closer agreement but to invert them is to make even steeper (shallower) the *HMF* corresponding to blue (red) galaxies, mainly at the high-mass end (see Figure 3, lower panel). This would imply, for instance, a larger correction to the *HMF* due to groups than that made by us. The group/cluster mass function used by us (Heinämäki et al. 2003) is one of the most general ones found in the literature; it includes all kinds of groups/clusters with 3 or more members and $\delta N/N \geq 80$. The authors note that their sam-