The intriguing life of massive galaxies
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Clustering of EROs from UKIDSS DXS and Pan-STARRS PS1

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Abstract. We have measured the angular two-point correlation function of EROs. The halo model is fitted to the observed clustering, and dark matter halo mass, bias and satellite fraction are estimated in three redshift bins. We also compare our results with the semi-analytical galaxy formation model. This work illustrates the power of clustering analysis in providing observational constraints on simulations.

Keywords. galaxies: halos, large-scale structure, infrared: galaxies

1. Introduction & results

Recent wide, deep near-IR surveys provide an opportunity to investigate the clustering of high redshift galaxies. Extremely Red Objects (EROs) are massive galaxies at $z > 1$. We have selected EROs in the Elais-N1 field by merging the UKIDSS DXS with the Pan-STARRS PS1 MDS dataset. Based on halo modeling, the average mass of dark matter haloes hosting EROs is over $10^{13} h^{-1} M_{\odot}$, and the bias parameter ranges from 2.7 to 3.5 (left and middle panels in Fig. 1). Comparing the halo occupation distributions from the halo model and `GALFORM`, the `GALFORM` semi-analytical model predicts too many EROs either as satellites or in less massive haloes (right panel in Fig. 1) than the observations.

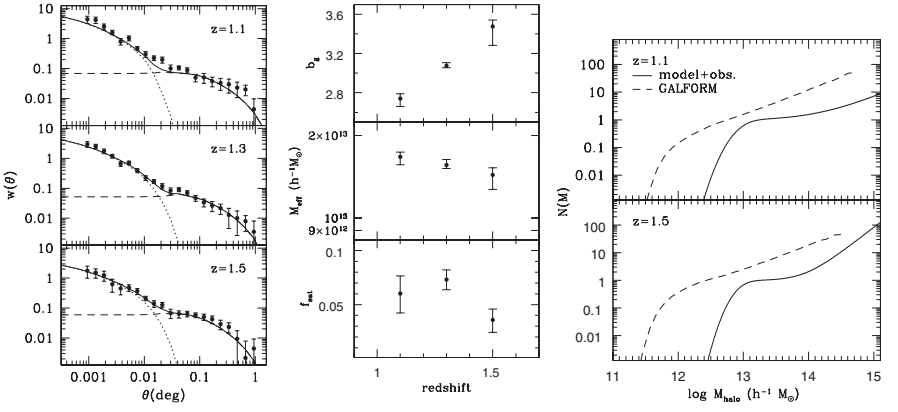

Figure 1. Left : correlation function of EROs and best fit halo models. Middle : derived parameters from the halo model. Right : comparison of HODs from the halo model and `GALFORM`.