

The Halo Occupation Distribution of 2dF Galaxies

Cristiano Porciani, ETH Zurich

Abstract The 2-point correlation function of 96,791 galaxies from the 2dFGRS has been used to study how local galaxies are distributed within their host dark-matter haloes. In particular, we estimated the mean number of galaxies which populate a halo of a given mass and the corresponding variance for galaxies with different spectral types. We found strong evidence for morphological segregation, as late-type galaxies appear to be distributed within haloes of mass scales corresponding to galaxy groups and clusters up to about two virial radii, while passive objects show a preference to reside in smaller haloes and closer to the halo centre. As regards the number-density profile of galaxies within a single halo, we found that both early and late-type galaxy distributions can be well described by dark matter profiles found in CDM models. However, while star-forming galaxies can even allow for steeper profiles, this seems to be drastically ruled out in the case of early-type galaxies.