

The Spectroscopic Luminosity Function of Abell 85: clues on the upturn of dwarf galaxies

Irene Agulli
Università di Torino

March 27th, 2014

Abstract

The galaxy luminosity function (LF) is a powerful tool to study the formation and evolution of galaxies in different density environments. We measured the spectroscopic LF of the nearby and massive Abell 85 (A85) cluster down to $M^* + 6$. This LF was fitted by a double Schechter function and shows an upturn at faint magnitudes ($M_{r_i} - 18.0$). This upturn is not observed in other spectroscopic LFs of nearby galaxy clusters, but it presents a slope similar to the one measured for the field population. Nevertheless, the faint end population of A85 is formed by red galaxies, unlike the field one. We conclude that the cluster environment does not play a major role in the formation of the slope of the LF. However, the environment influences the nature of the faint-end galaxies by transforming faint galaxies from blue to red ones. This can be explained by the transformations involving the loss of gas of the galaxies and a subsequent quench of its star formation.