

SDSS (g–r) colors of isolated galaxies

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Abstract

Several processes can affect a galaxy over its lifetime. If effects of interaction with companions are minimized, it is possible to focus on secular evolutionary processes. We present a study of the SDSS (g–r) colors of isolated galaxies in the AMIGA project (Analysis of the interstellar Medium of Isolated GALaxies; <http://www.amiga.iaa.es>). Assuming that color is an indicator of the star formation history, this work better records the signature of passive star formation via pure secular evolution. We focused on median values for the main morphological subtypes found in the AMIGA sample (66% Sb–Sc and 14% E/S0) and compared them with equivalent measures of galaxies in denser environments. The main results of this study include: 1) a tendency for AMIGA spiral galaxies to be redder than similar type galaxies in close pairs, but 2) no clear difference when we compare with galaxies in other (e.g. group) environments; 3) a Gaussian distribution of the (g–r) color of isolated galaxies, as might be expected in the case of pure secular evolution; and 4) a smaller median absolute deviation in colors for isolated galaxies compared to both wide and close pairs.