Galaxy Luminosity Function of Abell 2199

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We have investigated the photometric properties and the luminosity functions of galaxies in the central region of Abell 2199, using BVR CCD images. The BVR images were obtained using the Bohyunsan Optical Astronomy Observatory (BOAO) 1.8m telescope and the Wisconsin-Indiana-Yale-National Optical Astronomy Observatory (WIYN) 3.5m telescope. It is found that early type galaxies in Abell 2199 show a tight color-magnitude relation with a slope of (B-R)/R = -0.02±0.02, which is similar to other clusters of galaxies. The luminosity functions of the galaxies (LFG) in Abell 2199 are derived for
MB < -11.5 mag, Mv < -14.5 mag, and MR <-13.5 mag. The LFGs are fitted using the Schechter function, and the values of the parameters are determined: M*B=-21.0 mag, M*V=-22.0 mag, M*R=-23.7 mag, αB=-1.43, αV=-1.39, and αR=-1.39 The slope of the LFG at the faint end derived in this study is found to be intermediate among the previous studies.