

Deep near-IR photometry of eight metal-poor globular clusters in the Galactic bulge and halo

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High quality J, H, and K' images are used to investigate the morphological properties of the near-infrared color-magnitude diagrams for five metal-poor bulge globular clusters and three halo clusters. Photometric parameters to describe the RGB shape, i.e., the colors at fixed magnitudes of $M_K = M_H = \{-5.5, -5, -4 \text{ and } -3\}$, the magnitudes at fixed colors of $(J - K)_o = (J - H)_o = 0.7$, and the RGB slope, have been measured from the fiducial normal points of the CMDs. We also measured the near-infrared magnitudes of the RGB bump and tip on the luminosity function of the RGB stars for each cluster. The RGB parameters of the observed metal-poor bulge and halo clusters are consistent with the previous empirical relationships between the RGB parameters and the cluster metallicity for metal-rich bulge clusters and halo clusters. The near-infrared magnitudes of the RGB bump and tip are in good agreement with the theoretical prediction of the Yonsei-Yale isochrone.