

Calibration and Standardization of Large Surveys and Missions in Astronomy and Astrophysics



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Assessing SDSS spectroscopy via kinematics

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A statistical-parallax analysis of the sample of Chen et al. (2010), which the authors purport to consist mostly of red horizontal-branch stars selected based on SEGUE spectroscopy, shows that the luminosities of the stars of this sample are overestimated, on average, by ~ 2 mag in terms of absolute magnitude. This result implies that the sample actually consists mostly of main-sequence and turnoff stars and might be only slightly contaminated by horizontal-branch objects. Hence SDSS surface gravities in the temperature range of RHB stars appear not to allow proper separation of highly and moderately evolved stars, in contrast to the situation with blue horizontal-branch stars identified by Xue et al. (2008) whose absolute magnitudes are found to be consistent with their classification.

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