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Current Results of the New Metallicity Calibration Method for EMP Stars

The aim of the proposed study is to present the current results of a freshly developed photometric metallicity calibration method for the discovery of new EMP stars ($[\text{Fe}/\text{H}] < -2.5$). Different from others, this system is theoretically formed by a narrow band filter (CaK) centered on Ca II K line (3933\AA) together with the broad band SDSS (Sloan Digital Sky Survey) filters (ugr). Our calibration has been obtained from the u'g'r'CaK observations of around 100 giant calibration stars, made at Turkish National Observatory between April 2016 and August 2018. With this method, the metallicity of a star, whose u, g, and r band observation data have already been acquired, will be determined by observing the star only in the CaK filter without the need of any spectroscopic information.

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