

Tunable filter absorption line spectroscopy of the Galactic bar. Metallicity gradients

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*CALcium triplet And Metallicity Analysis in two REgions of the galactic bar with tunable filter pseudo-Spectra project

Abstract

The stellar metallicity distribution of stars can be a very useful tool to constrain the chemical evolution models reproducing different formation scenarios for the Galactic bulge. However, classical spectroscopy of individual stars is observationally expensive, and the surveys done so far have been unsuccessful due to the low number statistics. Recently, the advent of tunable filter tomography has opened a new way to obtain low-resolution spectroscopy of large samples of stars. We present preliminary results on an on-going study to measure the stellar metallicity at two different locations along the Milky Way bar ($l = 15^\circ$ and $l = 27^\circ$) using the GTC-OSIRIS red etalon. The two fields are intended to survey the central and external part of the Milky Way bar, and they have been scanned at 25 different wavelengths separated by 10 Å, covering the wavelength range from 8400–8700 Å. Our metallicity measurements will be based on the Ca II triplet observed in red clump giants, which has been proved a good tracer of metallicity and has been calibrated with the [Fe/H] content in previous studies. The comparison of the obtained results with the metallicity gradients predicted by different models shall provide constraints on the formation of the bulge and the bar in the Milky Way.

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