

NLTE Analyses of high-Resolution H-band Spectra on Neutral and singly-Ionized Calcium

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Calcium is one of the α -elements. It can be used to analyze star formation, the Galactic structures, and the chemical enrichment of the Galaxy. APOGEE aims to explore red giants across all components of the Milky Way with providing high resolution and high S/N spectra. It has obtained more than 5,000,000 spectra for over 150,000 stars. We updated calcium atomic model with collisional rates from quantum-mechanical computations. We investigated the reliability of our model and the NLTE effects on optical and H -band Ca I lines. The study found that our model can give consistent abundances between optical and H -band Spectra. The NLTE effects of optical lines differ from line to line and NLTE effects on H -band lines in our parameter spaces are negligible.

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Talk/Poster

Poster

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