AI learn the stellar spectrum

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Abstract

Examining the properties of stellar populations in and around the Milky Way is a crucial step towards the understanding of galactic evolution. Gaining insight into this process can provide us valuable information about the large-scale and long-term characteristics of both ordinary and dark matter. In this study we focused on the spectroscopic aspect of this investigation, by looking into how well autoencoder-based neural networks (AEs) perform in the processing and analysis of stellar spectra. We show that AEs are capable of learning the characteristics of a stellar spectrum to a considerable extent, even in noisy and low S/N conditions.

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