New tool for atmospheric parameters determination and abundance analysis of hot stars

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Abstract

As most of our knowledge about structure and evolution of stars comes from interpretation of their electromagnetic spectrum, it is very important to develop efficient methods for rapid and automatic atmospheric parameters determination. We have implemented scientific software that uses non-LTE atmospheric models and theoretical spectra derived with SYNSPEC and TLUSTY codes. This Python3 based package includes tested algorithm for atmospheric parameters determination and abundance analysis of B-type stars, and gives tools for interpolation on grid of atmospheric models or theoretical spectra, computation of grid of spectra, and spectrum fitting. The most important advantage of the new package is that it uses prepared, well described blocks that allow the user to build well suited algorithm for atmospheric parameters determination of chosen type of stars or just use implemented algorithm for B-type stars. Our package is tested on a sample of well known B-type stars.

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