

Determination of stellar parameters of rapidly rotating massive stars.

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Fast rotation directly affects the shape of the observed spectral lines. Therefore, several physical considerations must be considered when using stellar atmosphere models to obtain stellar parameters. In this work, we used the code ZPEKTR, which considers the oblate shape of the stars due to the high rotational velocities, limb darkening, and gravity darkening effects. The code divides the stellar surface into a triangular mesh with approximately 120000 area elements. Each one is assigned a TLUSTY model with its effective temperature, $\log g$, and radius; the model depends on the inclination angle of the star. We applied this code to obtain the stellar parameters of ten classical Be stars and two extremely metal-poor O stars. We create a grid of models for each star and use the chi-square test to determine the best fit to the observed HeI 4471Å (Be stars) and CIII 1176Å (O stars) spectral lines. Comparing our results of the inclination angle with data from the literature obtained using interferometry, we can conclude that with a small telescope and using spectroscopic techniques, we can find an accurate value for i . For future work, we will use the code for many fast-rotating stars and increase the number of photospheric lines used.

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