

Studying the complex spectral line profiles in the spectra of hot emission stars and quasars

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Abstract

In this review we present quickly the scientific fruits of collaboration between the spectroscopy teams of the University of Athens and the Observatory of Belgrade. We discuss how the complex absorption lines in spectra of hot emission stars and quasars, created in the material around stars/quasars (here density regions of matter around the objects). Particularly we present a model (GR model) which is developed to study Satellite or Discrete Absorption Components (DACs or SACs). Using the model we are able to extract kinematical parameters (rotational, radial and random velocity) and some physical parameters (Full Width at Half Maximum, optical depth in the center of the line, column density and absorbed or emitted energy) of the density regions. Additionally, we discuss very large widths observed in some absorption lines. Finally we present the open scientific questions of this field and the future scientific program of our team.