

**A NEW MODELING APPROACH FOR DACs AND SACs REGIONS  
IN THE ATMOSPHERES OF HOT EMISSION STARS**

E. DANEZIS<sup>1</sup>, D. NIKOLAIDIS<sup>1</sup>, E. LYRATZI<sup>1</sup>, L.Č. POPOVIĆ<sup>2</sup>,  
M.S. DIMITRIJEVIĆ<sup>2</sup>, E. THEODOSSIOU<sup>1</sup> and A. ANTONIOU<sup>1</sup>

<sup>1</sup>*University of Athens, School of Physics, Department of Astrophysics, Astronomy  
and Mechanics, Panepistimiopolis, Zografos 157 84, Athens – Greece*

<sup>2</sup>*Astronomical Observatory, Volgina 7, 11160 Belgrade, Serbia  
E-mail: edanezis@cc.uoa.gr*

The presence of Discrete Absorption Components (DACs) or Satellite Absorption Components (SACs) is a very common phenomenon in the atmospheres of hot emission stars (see Danezis et al. 2003, Lyratzi & Danezis 2004) and result to the complex line profiles of these stars. The shapes of these lines are interpreted by the existence of two or more independent layers of matter nearby a star. These structures are responsible for the formation of a series of satellite components for each spectral line. Here we will present a model reproducing the complex profile of the spectral lines of Oe and Be stars with DACs and SACs (Danezis et al. 2003, Lyratzi & Danezis 2004). In general, this model has a line function for the complex structure of the spectral lines with DACs or SACs and include a function  $L$  that considers the kinematic (geometry) of an independent region. In the calculation of the function  $L$  we have considered the rotational velocities of the independent regions, as well as the random velocities within them. This means that the new function of  $L$  is a synthesis of the rotational distribution and a physical Gaussian. Finally, we calculate the optical depth ( $\tau$ ) and the column density ( $d$ ) of each independent density region.

**References**

- Danezis, E., Nikolaidis, D., Lyratzi, V., Stathopoulou, M., Theodossiou, E., Kosionidis, A., Drakopoulos, C., Christou G. & Koutsouris, P.: 2003, *Ap&SS*, **284**, 1119.  
Lyratzi, E. and Danezis, E. 2004, AIP Conference Proceedings 740, pp. 458-473 [THE PHYSICS OF IONIZED GASES: 22nd Summer School and International Symposium on the Physics of Ionized Gases, Bajina Bašta, 23-27 August 2004, eds. Lj. Hadzijeovski, T. Grozdanov, N. Bibić].