Poster

STARK WIDTHS OF Ar II SPECTRAL LINES IN THE ATMOSPHERES OF SUBDWARF B STARS

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In this work we present Stark widths of Ar II spectral lines calculated using semi classical perturbation approach (Sahal-Bréchot 1969 a,b). Energy levels and oscillator strengths needed for this calculation are carried out using Hartree-Fock method with relativistic corrections (Cowan 1981) and an atomic model including 24 configurations. We are interested on the transitions belonging to the 3d - 4p transition array. In order to check the accuracy of our results, our Stark widths are compared with available experimental results and with semiclassical calculations of Griem (1974). Our Stark widths may be of interest for modelling and investigation of stellar atmospheres since Ar II spectral lines are observed in many kind of stellar atmospheres such as the atmospheres of B-type and subdwarf B stars. Finally, the importance of Stark broadening mechanism is studied in the atmospheric conditions of subdwarf B stars. Electron impact Stark widths are compared to thermal Doppler widths as a function of temperature and optical depth of atmospheric layers.

References

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