On the Stark broadening parameters of Ir II spectral lines

Zoran Simić[1] and Nenad Sakan[2]

[1]Astronomical Observatory, Volgina 7, 11060 Belgrade, Serbia
E-mail: zsimic@aob.rs
[2]University of Belgrade, Institute of Physics, PO Box 57, 11001 Belgrade, Serbia

The presence of singly ionized Iridium lines in spectra of chemically peculiar stars (CP stars) is experimentally confirmed recently. Stark widths for additional 50 Ir II spectral lines are calculated using the modified semi-empirical method of Dimitrijević and Konjević. The calculations of Stark widths (FWHM) for electron-impact broadening, have been performed for a perturber density of 10^{17} cm^{-3} and for a temperature value of 10000K. In order to have a easier to monitor and observe atomic data for spectroscopy the transitions in our table follows the list of spectral lines from the NIST database.

Within the frame of the presented work a additional data for 50 more Ir II spectral lines are added to the previously calculated data of 301 lines presented earlier (Simić et al. 2021.). The enhanced dataset is applicable to the describing of CP stars spectra and is step forward towards the completing of dataset for known CP stars atmosphere composition.

References

Zoran Simić, Nenad M. Sakan, Nenad Milovanović, and Mihailo Martinović. Singly ionized iridium spectral lines in the atmosphere of hot stars. International Astronomy and Astrophysics Research Journal, 3(2): 33-47, 2021; Article no. IAARJ.70329