

## ON THE STARK BROADENING OF Si III SPECTRAL LINES IN STELLAR PLASMA

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Silicon atoms and ions in various ionisation stages are present in cosmic plasma and the Stark broadening of the their spectral lines is important for analysis, investigation and modelling of stellar plasma, especially for white dwarfs and hot stars of A and late B spectral type. They are also of interest for example for research and synthesis of stellar spectra, abundance determinations and radiative transfer calculations. In order to provide the needed Stark broadening parameters, calculations have been performed for a number of Si III spectral lines broadened by electron-, proton-, and helium ion-impacts, by using the semiclassical perturbation theory. The obtained results have been used to demonstrate the importance of Stark broadening in the spectra of A-type stars.

We note as well, that the obtained new Stark broadening data will be implemented in the STARK-B database ( <http://stark-b.obspm.fr> – Sahal-Bréchet et al., 2015), a part of Virtual Atomic and Molecular Data Center (VAMDC - <http://www.vamdc.org> – Dubernet et al., 2010).

### References

- Dubernet, M. L. et al.: 2010, *J. Quant. Spectrosc. Radiat. Transfer*, **111**, 2151.  
Sahal-Bréchet, S., Dimitrijević, M. S., Moreau, N., Ben Nessib, N.: 2015, *Phys. Scripta*, **50**, 054008.