

## ON THE STARK BROADENING OF Ga II SPECTRAL LINES

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Reliable data for Stark broadening of Ga II are important for abundance determination, stellar spectra analysis and synthesis, investigation of diffusion, calculation of absorption coefficient, and consequently equation of state, radiative acceleration and atmospheric stratification of gallium, which is overabundant in chemically peculiar stars (in particular Hg-Mn stars). These stars are mainly of A and late B type, where Stark broadening is the principal pressure broadening mechanism. Data on Stark broadening of Ga II are also of interest for white dwarfs.

In order to provide the needed Stark broadening data for Ga II spectral lines, we calculated, using the semiclassical perturbation theory (see Sahal-Bréchet et al. (2014) and references therein), Stark line widths and shifts determining line shapes for important Ga II lines. The calculations were performed for a grid of temperatures and densities of perturbing particles, for collisions with the most important charged constituents of stellar atmospheres, electrons, protons and He II ions. We used the obtained results for the investigation of the influence of Stark broadening on Ga II spectral lines in atmospheres of chemically peculiar stars of A type, with overabundance of gallium, and white dwarfs. The obtained data will be prepared also in VO (Virtual Observatory) and XSAMS (XML Schema for Atomic, Molecular and Solid Data) format for the implementation in

the international, on-line database STARK-B, a part of VAMDC (Virtual Atomic and Molecular Data Center).

### **References**

Sahal-Bréchet S., Dimitrijević M. S., Ben Nessib, N.: 2014, *Atoms* 2, 225