

ON THE TEMPERATURE DEPENDENCE OF STARK WIDTHS

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Abstract. Simple estimates and approximations play important role in Stark broadening theory, especially in the use for astrophysical purpose. According to the statistical analysis of Stark widths obtained with modified semiempirical approach, the dependence of Stark widths on temperature is determined. New expression describing the dependence of temperature is tested on calculation of Stark widths using simplified modified semiempirical formula, in order to extend this formula toward higher temperatures above the lower treshold limit, which are significant in research of stellar plasma. Results obtained with extended form of simplified modified semiempirical formula are compared with corresponding Stark width values previously calculated with modified semiempirical approach in order to determine the accuracy of new method.(Dimitrijević and Konjević 1981, Dimitrijević and Konjević 1987, Majlinger et al. 2015, Majlinger et al. 2017)

References

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