

APPLICATION OF STARK BROADENING OF AlIV SPECTRAL LINES IN ASTROPHYSICS

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The study is a continuation of our previous work on the Stark broadening width of AlIV spectral lines. Conditions of interest cover a wide range of temperatures, from 10 000 K to 160 000 K and electron density of 10^{17} cm⁻³. The modified semiempirical method (MSE) is applied where the spectral lines are broadened by interactions of emitters with electrons. The studied spectral lines belong to the visible part of the spectrum which is of interest in both astrophysics research and laboratory plasma diagnostics. Temperature dependence of Stark width is analyzed. The similarities of Stark widths within multiplets and supermultiplets are discussed. Comparison with available experimental and calculated results from the literature is presented.

References

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