Stark broadening parameters of the singly ionized sulfur S II ion

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In this work, we are interested by the calculation of Stark broadening widths of several singly ionized sulfur S II spectral lines by two methods:

For the first method, we used the semi-classical theory. In this formalism, Stark broadening of isolated lines are calculated in the impact approximation; semi-classical formulae were provided, including both dipole and quadrupole terms in the expression of electrostatic interaction between the optical electron and the perturber.

The theoretical values of Stark widths are calculated using energy levels and oscillator strengths of S II from the COWAN, AUTOSTRUCTURE and CIV3 atomic structure codes and from NIST database.

For the second method, we used the modified semi-empirical (MSE) formalism Dimitrijević *et al.* (1980).

We compared the calculated Stark parameters with available data from the literature.