Poster paper

CALCULATION OF THE MULTIPLET FACTOR $l_1^n(L_nS_n)\ l_2^m(L_mS_m)\ l_3^p(L_pS_p)$ IN LS-COUPLING

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Sahal-Bréchot (1974) studied the Stark broadening of isolated lines in the impact approximation; semi-classical formulae were provided, including both dipole and quadrupole in the expansion of the electrostatic interaction between the optical electron and the perturber. Therefore the angular factors of the quadrupole term appearing in the semi-classical expression of the width of line broadened by electron or ion impact is calculated in L-S coupling for complex atoms, using the Fano-Racah algebra.

She studied the multiplet factor for a configuration of the type ln and $l_1^n(L_nS_n)$ $l_2^m(L_mS_m)$. Therefore angular factors B_i, B_f and B_{if} need a generalization for more complicated configurations.

Here we present a formula for the multiplet factor for configuration of the type $l_1^n(L_nS_n)\ l_2^m(L_mS_m)\ l_3^p(L_pS_p)$ in L-S coupling.

R_{mult} has the usual meaning (Shore and Menzel 1968; Dekker 1969), noting that we are here interested in the diagonal elements for calculating angular factors.

References:

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