

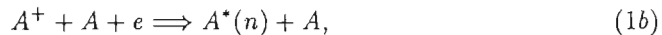
A - A^{*}(n) IONIZATION AND A - A⁺ - e RECOMBINATION PROCESSES IN STELLAR ATMOSPHERES

A. A. MIHAJLOV^{1,2} and M. S. DIMITRIJEVIĆ²

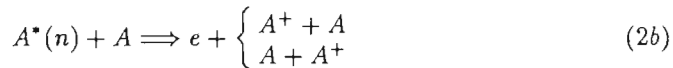
¹*Institute of Physics, Pregrevica 118, 11080 Zemun, Serbia, Yugoslavia*

²*Astronomical Observatory, Volgina 7, 11050 Belgrade, Serbia, Yugoslavia*

A semiclassical method for the determination of rate coefficients for recombination during electron scattering on symmetrical molecular ions, and on collisional quasi-molecular ion-atom complexes ($A^+ + A + e$)



as well as for $A^*(n) + A$ ionization



has been investigated and applied recently for various laboratory and astrophysical plasmas (Mihajlov and Ljepojević 1982, Mihajlov et al. 1992, 1996ab). Here e is a free electron, A_2^+ the molecular ion in the ground electronic state and A and A^+ are atom and ion in the ground state. The method has been applied to hydrogen and helium plasmas for conditions of solar atmosphere and atmospheres of helium rich DB white dwarfs.

It was shown that the considered processes may have an important or even a dominant role in comparison with other relevant recombination and ionization processes in relatively low-ionized hydrogen and helium plasmas, and particularly in weakly-ionized helium plasmas of DB white dwarf atmospheres.

References

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 Mihajlov, A.A. and Ljepojević, N.N. : 1982, Proc. Symp. on Physics of Ionized Gases (Dubrovnik, 1982), (Zagreb : Institute of Physics of the University of Zagreb), Contributed papers, p. 385.
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