

**EFFECT OF ION SHELL STRUCTURE ON THE SPECTRAL LINE
BROADENING BY ELECTRON COLLISIONS IN ALKALI PLASMAS**

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Spectral lines are rich with information that serve to describe the studied plasma. These lines are broadened by different causes: in astronomical dense plasma, the Stark broadening dominates the profile with Lorentzian structure. For alkali plasmas, the short range forces between the charged particles are of great importance. For alkali plasmas, at small distances between the particles, deviations from Coulomb law are observed which are mainly due to the influence of the shell electrons. Thus, the ion shell structure should be taken into account. In order to study this effect on spectral lines, we used HGK potential instead of Coulomb potential to compute the electron collision operator in the case of high temperatures and high densities. To do this work, we replace the integration over the impact parameter by the integration over the scattering angles. The results are compared with the theoretical work of Griem 1964 based on Coulomb interaction.