

Abstract Submitted
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Line-core and line-wing features in the temperature-dependent Mg(3s3p-3s²)-He(1s²) emission/absorption spectra MONCEF BOULEDROUA, LAMIA REGGAMI, Laboratoire de Physique des Rayonnements — The present study deals with the collisional broadening of the monoatomic magnesium, evolving in a helium gas, in the wavelength and temperature ranges 260-310 nm and 100-3000 K, respectively. The spectral profiles, generated from our theoretical computations, are based on the most recent potential energy curves and transition dipole moments. The purpose of this treatment is twofold. First, using the Baranger impact approximation, the width and shift of the line core of the spectra are determined and their variation law with temperature is examined. The obtained results agree quite well with those already published. Then, the satellite structures in the blue and red wings are analyzed quantum mechanically. The calculations show especially that the free-free transitions are the most contributive in the MgHe photoabsorption spectra and a satellite structure is observable beyond the temperature 2000 K around the wavelength 274 nm.

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