

Abstract Submitted
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Single electron impact ionization of the methane molecule MAMMAR BOUAMOUD, University Center of Naama, 45000 Naama, Algeria, MOHAMMED SAHLAOU, Ecole Préparatoire En Sciences Et Technique de Tlemcen, NOUR EL HOUDA BENMANSOUR, Laboratoire de Physique Théorique de Tlemcen, ATOMIC AND MOLECULAR COLLISIONS TEAM — Triply differential cross sections (TDCS) results of electron-impact ionization of the inner $2a_1$ molecular orbital of CH_4 are presented in the framework of the Second Born Approximation and compared with the experimental data performed in coplanar asymmetric geometry. The cross sections are averaged on the random orientations of the molecular target for accurate comparison with experiments and are compared also with the theoretical calculations of the Three Coulomb wave (3CW) model. Our results are in good agreement with experiments and 3CW results in the binary peak. In contrast the Second Born Approximation yields a significant higher values compared to the 3CW results for the recoil peak and seems to describe suitably the recoil region where higher order effects can occur with the participation of the recoiling ion in the collision process.

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