

Abstract Submitted  
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**Two-photon excitation/ionization of inner shell atoms: Non-dipole approximation**<sup>1</sup> S.A. NOVIKOV, S.S. TAYAL, Department of Physics, Clark Atlanta University — The absolute values and shapes of cross sections for the processes of two-photon one-electron excitation/ionization of the 1s-shell of neon atom, including the effect of relaxation of the atomic residue in the field of the creating vacancies, are calculated. We used velocity form for matrix elements of electromagnetic field interaction operator in three approximations: dipole, non-dipole (one channel) and non-dipole (many channels). The cross sections have been calculated for both linearly and circularly polarized photons.

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