

Title: Scattering of $e^{\pm}$ by H-isonuclear series

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Abstract: Calculations are presented for elastic differential and integrated cross-sections like elastic, momentum transfer, viscosity, inelastic, total (elastic + inelastic) and total ionization along with the Sherman functions for electrons and positrons scattering from hydrogen isonuclear series at incident energies from 1 eV to 1 MeV. To describe the scattering from neutral atoms, this work employs the relativistic Dirac partial wave (phase-shift) analysis with a short-range complex optical-potential model (OPM), comprising static, polarization, exchange (for electrons only), and absorption potentials. This potential is supplemented by the modified Coulomb potential for the same purpose for a charged atom. A reasonable agreement is found when we compare our computed results with available experimental data and other theoretical computations.

Keywords: Electron Scattering; Positron Scattering; Hydrogen Isonuclear Series; Differential Cross-Sections; Integrated Cross-Sections;

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