

Abstract Submitted
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A simple method for obtaining accurate electron scattering phase shifts from ab initio MBPT energies of an atom in a cavity I. M. SAVUKOV, Princeton University — We present a simple method for obtaining elastic scattering phase shifts and cross sections from precise ab initio many-body perturbation theory (MBPT) energies of atoms in variable cavities. This method does not require calculations of wavefunctions of continuum states, can be generalized to many atoms and ions, and is extremely convenient because existing codes developed for energy calculations can be used without modifications. High precision of the method and close agreement with experiment are illustrated on examples of e-Ar and e-Kr scattering. Correlations as well as relativistic corrections are systematically considered.

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