

Abstract Submitted
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Hybrid theory for P-wave scattering of electrons from helium ions A.K. BHATIA, NASA/Goddard Space Flight Center — The hybrid theory has been applied to the S-wave scattering of electrons from H atoms,¹ and He⁺ and Li⁺⁺ ions.² In this method, both the short-range and long-range correlations are included in the Scrodinger equation at the same time. Phase shifts obtained in this method have rigorous lower bounds to the exact phase shifts. Now this method is being extended to the P-wave scattering of electrons from helium ions. At lower energies, the phase shifts obtained are very close to those obtained using the Feshbach projection operator formalism.³ But at higher energies, there is disagreement which is not understood.

¹A.K.Bhatia, Phys. Rev. A 75, 032713 (2007)

²A.K.Bhatia, Phys. Rev. A 77, 052707 (2008)

³A.K.Bhatia, Phys. Rev. A 73, 012705 (2006)

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