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**Variational Bound States of Screened Potentials** J.D. MANCINI, Kingsborough College of CUNY, V. FESSATIDIS, Fordham University, S.P. BOWEN, Chicago State University, W.J. MASSANO, SUNY Maritime — A number of years ago, a calculational scheme was introduced by Stubbins (Phys. Rev. **A48**, 220 (1993)) to compute the energies of both the Hulthén and Yukawa potentials. The method introduces a particular ansatz for solving the Schrödinger equation with screened Coulomb type potentials. In this work we wish to review the method of Stubbins and to show that it is, in fact, equivalent and a subset of a more systematic (and hence more useful) variational scheme (Zhou et al. Phys. Rev. **A51**, 3337 (1995)). This variational approach involves the construction of a basis by taking derivatives of the variational parameters of the system. The eigenvalues of the Hamiltonian matrix are then minimized with respect to these parameters yielding a “best guess” upper bound on the energies.

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