

Hydrogenic System in Half Space

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Some structural properties of the energy eigenfunctions of a hydrogenic system in half space, are analysed. Specifically, we have obtained the asymptotic behaviour when the electron is far away from the nucleus, the coalescence property when it is close to the nucleus, the inflection property when it is close to the potential barrier, the property when the nucleus is far away from the barrier, and a virial relation. Simple model wave functions are developed, incorporating these properties which give accurate values for the energies and some other physical quantities, and give a useful understanding of the physical structure of the system.

Key words: Hydrogenic System; Half Space.