Study on Systems of Hydrogen Atoms in the View Point of the Natural Statistical Physics

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Abstract

In this paper, we study the derivation and the solution of Schrödinger equation of the hydrogen atoms using the theory of Natural Statistical Physics. Using these results, we study the phenomena of the spectra of hydrogen atoms and the phenomena of the stability of hydrogen atoms. Here we consider the system of hydrogen atoms for which we need not to consider the influence of the outer electro-magnetic field. This is the case where there is no influence of outer electro-magnetic field or where we can neglect the influence of the outer electro-magnetic field. In this paper, we succeeded in deriving the Schrödinger eqation in the natural and reasonable way by the method of variational calculus. Thereby we can obtain the complete understanding of the phenomena of the spectra of hydrogen atoms and the phenomena of the stability of hydrogen atoms. In this paper, Fourier's method plays the fundamental role.