THE CAUSES AND MECHANISM
OF ATOMIC ENERGY LEVELS QUANTIZATION

Yibing Qiu

yibing.qiu@hotmail.com

Abstract: On the basis of concentric spherical layer-type model, put forward a new causes and mechanism of the atomic energy levels due to the quantum

> " *I think probably sometime in the future, we will get an improved Quantum mechanics, bring it back to determinism, thus proving Einstein's view is correct.*"-------------------------------**Paul Dirac**

Under normal conditions (in particular, the creation of artificial electromagnetic does not exist), through the mutual electromagnetic interaction between the nucleus and the charge itself, all foreign nucleus charge of an atom formed different volume charge density, multi-layer concentric spherical body type charge layers.

Since the volume charge density (Divergence) of each charge layer are different, so that the natural frequency of each charge layer are also different. Meanwhile, because the volume charge density of each charge layer are different, making the mass per unit volume of each charge layer is different, by the $E = mc^2$, we can know that the energy which contained in every unit volume of each charge layer are also different, I.e., the energy density of different charge layer are different.

Because of the existence of this cases that energy density and the natural frequency of the discrete, differential distribution of stratification, on the whole, and showing the formation of atomic energy distribution pattern having a plurality of discrete energy levels, structure and morphology.

In summary, extra-nuclear charge volume density stratification differentiated is the causes of atomic energy levels quantization.

In the normal state, an atom of an element in its k-th charge layer formed therein, we make the following definition: not any state atomic energy exchange (in the form and means) had occurred with the outside world, is the benchmark of the atomic energy state; otherwise known as: benchmark energy state atoms.

Under the benchmarks energy state atoms located:
1. v_i is the benchmark frequency (= natural frequency) of the i-th charge layer,
   i= 1,2,...,k.
2. E_i is the benchmark energy level of the i-th charge layer, $E_i=hv_i$; i=1,2,...,k,
   h is the Planck's Constant.
3. E_{i0} is the benchmark energy of the i-th charge layer, and there be $E_{i0} = m_ihv_i$;
   i = 1,2, ..., k; m_i is a positive integer.
4. E_0 is the benchmark energy of the atom, there $E_0 = m_1hv_1 + m_2hv_2+ ... + m_khv_k$.

Each charge layer (benchmark energy level was E_i, $E_i = hv_i$; i = 1,2,...,k), uniquely corresponding to a spectral lines; k corresponds to a k-charge layer of spectral lines corresponding to the frequency spectrum of v_i. On the contrary, there are k spectral lines, it should exist k different charge densities of individual layers correspondingly; if the frequencies of a spectrum is v_i. Its corresponding benchmark frequency (natural frequency) of the charge transport layer is v_i.

Each charge layer, forming a fundamental field; k charge layers; formed k fundamental fields. The particles from the same fundamental field (the same charge layer) is absolutely identical particles, each and every all is $E_i= hv_i$ (i=1,2,...,k) of identical particles (quantum of energy).