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Introduction to the Neutrosophic Quantum Theory FLORENTIN SMARANDACHE, Univ of New Mexico — Neutrosophic Quantum Theory (NQT) is the study of the principle that certain physical quantities can assume neutrosophic values, instead of discrete values as in quantum theory. These quantities are thus neutrosophically quantized. A *neutrosophic values* (*neutrosophic amount*) is expressed by a set (mostly an interval) that approximates (or includes) a discrete value. An oscillator can lose or gain energy by some neutrosophic amount (we mean neither continuously nor discretely, but as a series of integral sets: *S, 2S, 3S, ...,* where S is a set). In the most general form, one has an *ensemble of sets of sets*, i.e. $R_1S_1, R_2S_2, R_3S_3,$ *...,* where all R_n and $S_n$are sets that may vary in function of time and of other parameters. Several such sets may be equal, or may be reduced to points, or may be empty. {The multiplication of two sets A and B is classically defined as: $AB = \{ab,$ *a??A and b??B*$\}$. And similarly a number n times a set A is defined as: $nA = \{na,$ *a??A*$\}$. }The *unit of neutrosophic energy* is $H\nu$, where H is a set (in particular an interval) that includes Planck constant h, and ν is the frequency. Therefore, an oscillator could change its energy by a *neutrosophic number of quanta*: $H\nu$, $2H\nu$, $3H\nu$, etc. For example, when H is an interval$[h_1, h_2]$, with $0 \leq h_1 \leq h_2$, that contains Planck constant h, then one has: $[h_1\nu, h_2\nu]$, $[2h_1\nu, 2h_2\nu]$, $[3h_1\nu, 3h_2\nu]$,..., as series of intervals of energy change of the oscillator. The most general form of the units of neutrosophic energy is $H_n\nu_n$, where allH_n and ν_n are sets that similarly as above may vary in function of time and of other oscillator and environment parameters. Neutrosophic quantum theory combines classical mechanics and quantum mechanics.

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