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Increased knowledge of the behavior of matter by using complementarity in physics

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Abstract

Twin physics is a new physical model, in which the basic features of quantum mechanics and relativity theory are combined to a manageable description, reaching from sub-atomic to astronomic phenomena and so creating a bridge between large- and small-scale phenomena. This is obtained by using the Heisenberg principle, the definition of complementarity by Jammer and the ideas of Einstein. The used formalism is fully complementary, developed on the concept that each phenomenon has determinate as well as indeterminate aspects, being mutually independent. These aspects occur joined in nature, in such a manner that one of both dominates an observation and the other acts as a small disturbance. Some illustrative examples from everyday life will be given. The basic item is the Heisenberg-unit (H-unit), defined as a constant amount of potential energy and supplied with complementary attributes of time, space, and charge. Only by interaction between two H-units, their potential energy can be transformed into physical items. The resulting phenomena can be described in an easily accessible geometric way. Applying the formulation to all kind of possible interactions between H-units, descriptions of a series of elementary particles as well as the four forces of nature, neutron decay and gravitational waves are obtained.

The most surprising result is the appearance of four types of electrons, having features being unknown in classical physics. In this lecture we focus upon two of them, having no mass and a short-range magnetic field around. After an introduction of twin physics without going deep into the theoretical basics, their features are explained in detail. These types of electrons are supposed to provide nanomaterial's with conductivity much higher than known from classical experiments; also, they are expected to reveal hidden mechanisms in chemistry.

Biography

Anna Backerra graduated in theoretical physics at the Eindhoven University of Technology in The Netherlands and worked for three years at Philips Research Laboratories. She continued independently, making a search for complementary physics. Because at the time the general notion of complementarity was under-developed and not suitable to catch in mathematical terms, she continued to develop complementary thinking by studying composition at the Conservatory in Enschede (The Netherlands) and in Saint Petersburg (Russia). After that she constructed a complementary mathematical language and applied this on physics, obtaining twin physics. The surprisingly diverse results are published in 9 papers in physical journals and a book.

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