Paradigm change

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Abstract

In science theories is the development of science subdivided in different phases. The development is not continuous but after a phase of some accepted paradigms a paradigm change occurs with incommensurability in that time and after them the reception of the new paradigms will be done. The conception of the possibility of normal scientific work is also discussed in distinction to "per-scientific" or pseudo-scientific works. In physics the status of normal science is understood by the declared intention theories only admit of which prognoses are in compliance with experimental findings. The paradigms are the quintessence of the esteemed valid theories. But it is not easy to define precisely the paradigms out of the accepted valid theories. In physics we try it in the subdivision in classical physics, in quantum theories + relativity theories and in atomistic theory of matter. The paradigms of classical physics are based on the axioms of Newtons mechanics, on his gravitation theory, on Galileo's UFF hypothesis with the consequence of the equality of inertial and gravitational mass with constant masses, and on the possibility to determine exactly the position and/or velocity of particles at every time. The classical mechanics is completed with the classical electrodynamics with the constancy of light velocity. The relativity theories use the above mentioned possibility, postulate the relative motion of bodies either if the movement in comparison with the constant velocity c is considered in comparison with coordinate systems with constant velocities or if the bodies move in comparison with a constant acceleration. The weak equivalence principle is accepted and the energy is equivalent to the inertial mass. The gravity is a metrical deformation of space and time. The gravitational mass is thrown out of these theories. The quantum theories are based on the quantization of particle energies and on the quantization of the fields. Heisenberg's uncertainty principle with the Planck's constant h is used because the position and velocity (the impulse) of particles are not exactly determinable. These theories are energetic theories and there are many inconsequences in the connection of quantum and relativity theories. The atomistic theory of matter use stable particles with fields, instead of the UFF hypothesis it assumes elementary gravitational charges to cause the gravity, the gravitational and inertial masses are different and uses that neither the position, nor the velocity of particles can be exactly determined at any time, Four kinds of stable particles carry two kinds of Maxwell charges which cause the electromagnetic and the gravitational fields with the constant propagation c in a unified way. This theory explains also the role of the Planck's constant as Lagrange multiplier and avoids the inconsequences of the accepted theories before. The particle number conservation replaces the energy conservation. The transition to atomistic theory of matter corresponds to a paradigm change without reception in the physical literature nowadays.