

## Physics Congress 2020: The logic of reality of the observable Universe- Grzegorz Hoppe- University of Technology and Science, Poland

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### Abstract

The paper contains a simple description of the logic of observable reality with the help of human senses. It was assumed that the surrounding energy and matter are real beings, and that a real being is human consciousness in the form of self-awareness of their own existence and having the ability to create really free, unlimited thoughts. The logic of real being: 1.Empty and infinite space is an a priori being as a complement to nothingness. 2.Space is infinite when it has a metric that determines infinity. 3.Infinite space with a metric is an infinite space with an infinite number of metric points. A minimal real being in such a space is a two-dimensional finite space, or surface. The plane surface area is the original numerical quantity that defines the property of a minimal real being. The surface area is the basic numerical interpretation defining the original real being • There is a principle of conservation of energy in the observable universe. • In the observable universe, every event has its cause. • In the observable universe, there is a widespread phenomenon of quantum fluctuations, which is the instantaneous appearance of zero-magnitude energy. 4.In the observable universe, there are particles of matter with opposite charges. It was agreed to call them negative and positive. The electron has a known particle called a positron with the same amount of energy but the opposite charge. The amount of this energy has been experimentally determined as  $0.511 \text{ MeV} / c^2$ . 5.In the observable Universe, a known elementary particle with negative charge is an electron whose size was determined experimentally and is  $113 \cdot [10^{-17}\text{m}]^3$  volumes and  $113 \cdot [10^{-17}\text{m}]^2$  surface areas, i.e. a spherical object  $3 \cdot 10^{-17}\text{m}$  radius in 3D space. 6.

The phenomenon of the formation of an electron and a positron during a collision of two photons with an energy of at least  $0.511 \text{ MeV} / c$  each is known in the observable Universe. 7.In the observable universe, energy and matter are equivalent, taking into account the constant  $c$ , which in the case of matter is  $c^2$ . [Einstein] 8.In the observable universe, the state of atomic matter [the state of its electron orbitals] called solid, liquid and gas depend on the amount of thermal energy in the space in which the atomic matter is located. In 3D space, the real dimension of atomic matter in a solid and liquid state is the geometric shape [plane or sphere] and their surface area of its electronic orbitals. 9.In the observable Universe, the thermal energy of a perfect black body is 2.7 Kelvin, the thermal equilibrium point of space. 10.In observable 3D space there is a constant unit of electromagnetic energy movement, and at the same time a limitation of matter movement in 3D space called a constant  $c$  and defined as  $299.792.458 \text{ m} / \text{s}$ , where the second is the entropy of energy in the Universe, during the movement of  $1 / 86,400$  rotation of the Earth around its axis. In the current science, in addition to the phenomenon of quantum fluctuations, the phenomenon of electrons moving on electron orbitals, defined as the Heisenberg uncertainty principle, was accepted as a non-deterministic phenomenon. In purely theoretical science, i.e. number theory, the lack of determinism of prime numbers has been adopted, i.e. the lack of ordering of a set of natural numbers.

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