

Review on the manuscript “The informational physical model – Nuclear Force” by S.V. Shevchenko and V.V. Tokarevsky submitted to the Ukrainian Journal of Physics

This manuscript is a continuation of a series of works published by the same authors as preprints in ArXiv and other electronic repositories. The authors introduced the so-called “informational physical model” that considers the matter-time as a “dense (at least 4D) lattice” (analog of the ether concept). This lattice is thought to consist of the so-called “fundamental logical elements” (FLE) with a size of the Planck length. These FLEs are suggested to change their internal (binary) state in time intervals equal to the Planck time. The authors try to depict the formation (or creation) of particles as a result of the so-called “flipping” of lattice cells, i.e., FLEs. Then the authors try to extend their theory to describe the nature of the nuclear force.

The manuscript uses the knowledge of basic physics familiar to any student of physics. It uses neither the formalism of contemporary theoretical physics such as the quantum field theory, general relativity theory, or quantum electrodynamics nor even mentions these theories. There is no idea given regarding the place of the theory proposed by the authors in the contemporary theoretical physics. The reference list only cites two papers of the recognized German physicist C.F. von Weizsäcker published in the 1950s, one paper by H. Yukawa of 1935, and one old textbook (of 1993) on Elementary Particle Physics [in Russian]. All other citations are either self-citations or web links. It seems the authors either are not familiar with the state of contemporary physics or disregard all the knowledge of contemporary physics.

In regard to the model itself, the use of the word “informational” in the title of the manuscript is misleading and confusing since the manuscript does not deal with information as we know it. The assumption of the existence of ether as a dense lattice with cell size of the Planck constant is not justified or substantiated. The “flipping” concept and its relation to the Planck time is not described clearly enough. There are other models in the literature that speculate on the same assumptions. The authors do not mention such models (except for two papers by C.F. von Weizsäcker).

Moreover, being the Ukrainians, by some reason the authors decided to submit their manuscript in English. This makes reading the manuscript even more challenging because in many places the use of English is corrupted and the text is hard to understand. I would be much easier to read the text written in Ukrainian.

Summarizing, I cannot recommend this manuscript for publication in the Ukrainian Journal of Physics. It should be rejected as such that does not correspond to the level of contemporary physics and such as bringing no novelty to the field of nuclear physics.