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PARADOXES, LOGIC, AND PHYSICAL NATURE OF TIME

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Here I present my book. It contains a new approach to understand true origin of time, motion, and matter.

To my mather blessed memory is dedicated.

PREFACE

Above all, the author would like to warn a reader that some new time concept, which is not yet accepted by the physical professional community, is proposed here.

In May of the 1997 my brochure "On the time physical nature" was published. Later (2003), I published the work "The spherical expanded Universe theory" in the "Editorial URSS" Publishing (Moscow). In the 2005 on the Institute of Time Nature Explorations site (www.chronos.msu.ru) a continuation of this book ("The time logic and paradoxes") was published. The presented book joints the previous works into the entire one, taking into consideration some additions and modifications.

The initial work was due to Kozyrev's works study. I hasn't accepted his World physical concept, but started to reflect on the time essence, particularly on the assymmetrical time and space role in the Univerce expanding.

The presented work doesn't claim to cover the complete World physical picture. It considers the more narrow bounds of reality, but consists in a very radical revision of basic principles, and can have an influence on a generalizing theory.

The *first* chapter of the book declares an original natural and scientific author's position. The *second* chapter considers the time role and features in the Relativity. The review presents an essential compilation, because corresponding results aren't satisfactorily stated in the editorial literature.

Starting from the *third* chapter, the author goes to state his own concept of the cosmology. Particularly, a physical meaning of the equivalency principle is considered, new sides of the gravitational collapse are found out, and, the more important, a new solution of the cosmological equations are proposed.

In the *fourth* chapter this new solution is used to develop a spherical expanding Universe model, in which the time, its currency, and motion as such present natural constructions. Into this chapter a modified Universe evolution model is also introduced, in which a new E-group containing relativistic translations (not Poincare group) presents a generalization of the Lorentz group.

The *fifth* chapter is dedicated to inertial motion and to comparison of the Relativity conclusions with the new concept predictions. There are not some differences in the first approximation, but the absolute (selected) reference system existing is predicted in the next

approximation, so the new concept explains real phenomena like the background relic radiation dipole anisotropy.

A non-inertial motion and its liaison with the gravity are considered into the *sixth* chapter. In the conventional General Relativity some fictive gravitational fields are used to explain time variations due an irregular motion. On the contrary, real kinetic energy deviations are proposed as true physical causes of these variations by the new concept.

In the *seventh* chapter an analysis of two radiation models is executed. In the conventional electrodynamics only the retarded solution of the wave equations is usually available. On the contrary, the both retarded and advanced solutions are symmetrically used in the Wheeler-Feynman's radiation model. I consider the both models from the new point of view, and I come to conclusion that in fact the Wheeler-Feynman model adaptability isn't connected with the true "instant" interaction, but with a typical phase effect, when a "direct" period superposes on the other "reflected" period that is shifted in time, but coordinated in phase.

The problems of irreversibility are widely considered in the *eighth* chapter. Particularly, I discuss a specific irreversibility due to quantum measurements, wave function collapse, and decoherence.

I thank kindly the chairman of the Russian Interdisciplinary Temporology Seminar ph. D. A.P.Levich from the Moscow State University for his help and encouragement, including my works publishing on the Institute of Time Nature Explorations site (www.chronos.msu.ru, grant № 00-07-90211 of the Russian fund of the fundamental Researches). I would like also to thank my friend A.V.Moskowsky for many years philosophy and physics history discussions. Of course, these persons aren't liable for content of this work.

A reader may send me some questions and remarks using my e-mail address: shulman@dol.ru

Author, March of the 2006

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