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TIME AND INERTIA

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Here I present my book. In this publication author tried to analyze the general liaisons between time, space (on the first hand) and inertia phenomenon (on the other hand).

In the first chapter I treat the *inertia* meaning. Instead of the 2th Newton's law usual form one may consider the motion equation for the mechanical oscillator that allows us to select several important aspects of the mechanical inertia and to compare it with this one of the electrical oscillator. I stress the profound community of the inertia features for the objects having different origin, and I also point out to the genetic meaning of inertia as reaction to an external action due to any feedback mechanism. The inertia due to the "radiative friction" force is considered as an example of the frequency depending reaction.

The second chapter is dedicated to the *inertial motion* features. A short review of the inertial motion and non-inertial one for a particle, a particles system and a solid body at the *inertial* reference frame is given. I also consider the inertial motion at the *non-inertial* reference frame. Further, the important (on my opinion) problem is analyzed: do the inertial motion fundamental features propagate on a *non-mechanical* systems? In particular, I show that all the "Galilean" features can be propagate on the electrical circuits. At the chapter end the author own hypothesis is stated, from which the both inertial and non-inertial motion existence (as well as Hubbles law) can be deduced as *natural consequence*, so this existence does not present an independent axiom.

In the third chapter the author studies the liaisons between the inertia and the gravitation. At the chapter beginning I remember the Einstein's equivalence principle. Then I discuss this principle and the important difference between the fictive gravitational fields and the true ones. After that I propose to the reader an alternative (relative to the General Relativity) interpretation of the time currency changement cause at the accelerated motion. Further, the known Mach principle and particles interaction global models are discussed. The similar role of the gravitational and electrical charges in the inertia phenomena is stated, however, I point out to the scale difference in the "charge inertia" exhibition.

I thank all the readers of the book. A reader may send me his questions and remarks using my e-mail address: shulman@dol.ru

Author, July of 2005

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