

On the Basic Objection against the Shadow-Gravity Theory

Nikolay V. Dibrov

Prospect Gagarina, No 175, ap. 43, Kharkov-124, 61124, Ukraine; Email: nikdibrov@gmail.com

Abstract. Based on the derivation of the exact formula for the shadow-gravity force the basic objection against the shadow-gravity theory was eliminated.

Keywords: Objection against Shadow-gravity theory.

1. Introduction

The basic objection against Fatio-Lesage's idea of a mechanical explanation of gravitation is huge increasing of temperature as a result of the absorption of the fation energy. By Poincaré's estimation the increase of Earth temperature must be 10^{26} degrees per second [1]. Point is that, as Darwin noted [2], the attraction effect vanishes, when fations bombard bodies fully elastically, because fations that reflected between active fundamental sub-particles, FSPa, and passive FSPp¹, in the case of fully elastic collisions, exactly counterbalance the attraction. In [3, 4] I have shown that this problem is solved on base of a model of the exploding electron. The electron, in accordance with this model, absorbs fations gas energy and being exploded emits it in the form of *the charged electric field sub-particles* (EFS), whereas the generally excepted electrostatic field considered as flows of neutral photons. I assume that electrons generate negative EFS, and positrons (and protons) generate positive EFS.

In this paper I give additional arguments against above objection on base of the recently derived exact formula for the shadow-gravity force [4].

2. Theoretical development

In contrast to the well known Darwin derivation the new formula was obtained as the sum of forces from inelastic and elastic bombardments of interacting bodies.

We will show in this paper that elastic collisions also make a contribution in gravity, if a part of fations have inelastic collisions. I have introduced [3] some probability factor δ of inelastic collision of fations with FSPs, which is *the ratio of the part of the fations absorbed by FSP to the all fations bombarding FSP*. Accordingly, other part $(1-\delta)$ impacts in fully elastic way. In [4] I have found $\delta \sim 10^{-42}$.

The effects of elastic and inelastic impacts will be considered separately and then be summed. The total force will be as

$$F_{Gff}^{total} = F_{Gff}^{inelast} + F_{Gff}^{elast} = \frac{\pi \varepsilon_G \delta_a r_p^2 r_a^2}{4R^2} k_{total}, \quad (1)$$

where

$$k_{total} = k(R^*, \delta_a) [I_{elast} + \delta_p (I_{inelast} - I_{elast})]; \quad (2)$$

¹I suggest considering as fundamental such sub-particles, which are *absolutely impenetrable* for fations.

$$F_{Gff}^{inelastic} = \frac{\pi r_p^2 r_a^2 \varepsilon_G \delta_a \delta_p}{4R^2} k(R^*, \delta_a) I_{inelastic}; \quad (3)$$

$$F_{Gff}^{elast} = \frac{\pi r_a^2 r_p^2 \varepsilon_G (1 - \delta_p) \delta_a}{4R^2} k(R^*, \delta_a) I_{elast}; \quad (4)$$

$I_{inelast} = 1$ for any r and R ;

$$k(R^*, \delta_a) = 1 + \left[1 - \sqrt{1 - (r_f / R)^2} \right] / \delta_a, \quad (5)$$

where $r_f = r_a = r_p$ is radius of the generalized fundamental sub-particles, from which, by hypothesis, all substance consists.

For normally, macroscopic, conditions ($R^* = R / r_f \geq 10^{23}$) $I_{elast} = 1$ therefore according to (2) and (5) $k_{total} = k(R^*, \delta_a) = 1$.

Actually, basic part of the gravitational force is created at the expense of the action of elastic collisions. Indeed, regarding (1) and (3) the inelastic component makes up only $F_{Gff}^{inelast} / F_{Gff}^{total} = \delta_p \sim 10^{-42}$ part of the whole bombarding the body fations. Thus, Poincaré's estimation must be corrected as $10^{26} \times 10^{-42} = 10^{-16}$ degrees per second. During the existence of the Earth ($\sim 10^{17}$ seconds) its temperature must be increased, in result of the fation absorption, only to 10 degrees, thereby *the objection loses grounds*.

References

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