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MINI BLACK HOLE IN ZERO RESULTING POTENTIAL EXPLAINING THE EARTH – MOON GRAVITY. CORRELATION OF THERMIC RADIATIONS PHOTONIC FLOWS CHARACTERISTICS TO MASS GRAVITY

Ileana ROŞCA, Michel CONTE

Abstract: *This work is a continuation of part I and part II of the work [1] and [2] published in this journal. It concerns the duo Earth and its Moon satellite, but ubiquitous Sun must play a role.*
The existence of a mini black hole, at the zero resulting potential, is always tied with photonics nature and so, with quantum gravitational field of the masses. We can similarly obtain the same correlations as in the [1-2] despite the Sun essential influence in the solar system.
This work shows, using again the basics of the EVTD^2 entities theory and the solar system that flows arriving from the concerned photonic masses at the black hole are in the same report as the masses or their reciprocal potential acceleration.
This has led to some correlations for the various bodies duos in the solar system and this indicates research perspective for truer understanding of gravitation in his physical phenomenon that indicates current physics. Indeed the "engine" of gravity is realistic and has the merit of offering a set of correlations where physical phenomena fit harmoniously [3-4].
Key words: *Quantic potential, Quantic compacting, Quantic Gravity EVTD^2, Quantic Substratum, EVTD^2 entities theory.*

1. INTRODUCTION

Following the eight calculations in [1, 2] and the deduced conclusions, very relevant concerning the possible existence of a mini black hole in the zero resulting potential (relative to two masses), it steered the same approach regarding the Earth-Moon duo. This presumption of black holes in gravity, also brings suggestions on the possible existence of black holes at the center of masses of enough symmetrical forms [5]. Indeed the symmetrical center of a galaxy can be compared to the center of mass gravity for a symmetrical (spherical) form.

The stars, ultimately symmetrical about its center (given their large number in the galaxy), can be assimilated to the atomic scale to the multitude of electrons emitting photonic radiation in condensed matter itself. It follows that it can then be compaction of these various energies in symmetry centers by their electromagnetic radiation interference: wherefrom a possible mini black hole at this location. Indeed, the right conditions for it have been highlighted in work [6] with equal *h* energy levels to the zero resulting potential, in quantum gravity EVTD^2.

The quanta energy levels, took into account for the study of quantic gravity in EVTD^2, are calibrated from Planck quantum *h*. This was initiated by considering the "black body" emission of bodies in space-time due to their intrinsic temperature [5-7], which structure quantic gravitational fields in quanta *h*.

In the study of the duo Earth and its satellite Moon, some effects of the solar radiation must here be taken into account: that's part of the unavoidable circumstances. In this case for this duo, there will be the influence a third body - the Sun, which will support all the calculations considered.

2. INITIALS STEPS ONLY FOR THE DUO EARTH - MOON

As shown in [1-10], it is easy to calculate by the Newton's relationship, if each considered bodies' masses and their spatial spacing are known, the respective distances to their zero resulting potential *O*. It results, of ratios that are mentioned in this relationship (1), where OM_1 and OM_2 values are the distances from the masses to their point *O*:

$$F_G = m_1 g_1 = m_2 g_2 = \frac{G \cdot m_1 \cdot m_2}{d^2}.$$

It follows that:

$$\left(\frac{OM_1}{OM_2}\right)^2 = \frac{g_2}{g_1} = \frac{m_1}{m_2}. \qquad (1)$$

The data related to the Earth and the Moon are the following:

- Earth mass: $5{,}9736.10^{24}$ *Kg;*
- Moon 's mass: $7{,}348.10^{22}$ *Kg;*
- Distance between Earth and Moon: $3{,}844.10^{8}$ *m.*

The respective distances of each body to the zero resulting potential *O* are deduced: *OT=346022964,3 m* and *OL=38377035,7 m.* Terrestrial and Lunar rays are respectively: R_T= *6378 Km.*et R_L=*1737 Km.* The balance black body temperature for Earth was already considered at the value *250°K* in [1].

With regard of lunar balance black body temperature estimation, here we use a process of calculations directly connected to the correlations and conclusions of the works [1] and [2]. Indeed it has been obvious, by eight times, that the report of photonic flow due to masses black body temperatures was connected to the same value of the these bodies accelerations (potential or not) ratio. If we extrapolate this from the relationship between a pair of masses to two special masses, where only the respective free falls on their soil are considered, we should be able to get the black body balance temperature of one of them, if we have other necessary data for this calculation.

We know that the relative gravitational accelerations of Earth and the Moon are in the report of *6.04*.

So, by extension of the [1-2] conclusions, we can deduce the ratio of the respective emittance values of the Earth soil and on the lunar surface that should be equal to *the ratio of the respective accelerations (same mass for example 1 Kg) in free fall on Earth and on the Moon*. We shall have equality, if M_E and M_m are respectively the emittances of Earth ground and of the lunar surface, according the Stefan law, relating black body and, knowing that the Earth equilibrium blackbody temperature is considered at the value of 250°K:

$$M_E = \sigma T_E^4 = 5.6704 \cdot 10^{-8} \cdot (250)^4 = 221.5 \ \text{W/m}^2;$$

$$M_M = \sigma T_m^4 = 5.6704 \cdot 10^{-8} \cdot (T_M)^4 \ \text{W/m}^2.$$

The reporting of these photonic flows in W/m^2 and matching it to the respective g_T and g_L acceleration ratio of 6.04, we have the equality:

$$\frac{M_E}{M_M} = \frac{T_E^4}{T_M^4} = 6.04 \Rightarrow$$

$$\Rightarrow T_M = \sqrt[4]{\frac{(250)^4}{6{,}04}} = 159.5 \ ^\circ K,$$

what is the estimated value of the lunar surface black body equilibrium temperature: *159.5°K.* :

We can therefore follow the process of calculations, already used eight times in [1-2], to identify simply the levels of photonic flows coming from the Earth and the Moon, arriving in *O*, as:

$$E_{\substack{Sphere \\ Earth}} = 5.6704 \cdot 10^{-8} (250)^4 4\pi (6.378)^2 10^{12} = 11.322768405374 \cdot 10^{16} \ \text{W};$$

$$E_{\substack{Sphere \\ EO/m^2}} = \frac{11.322768405374 \cdot 10^{16}}{4\pi (3460229643)^2} = 7.5254576 \cdot 10^{-2} \ \text{W/m}^2;$$

$$E_{\substack{Sphere \\ MO/m^2}} = \frac{1.391444685436 \cdot 10^{15}}{4\pi (383770357)^2} = 7.5182 \cdot 10^{-2} \ \text{W/m}^2;$$

hence the first comparison between the concerned ratio following [1-2]:

$$E_{\underset{EO/m^2}{Sphere}} / E_{\underset{MO/m^2}{Sphere}} = \frac{7.5254576 \cdot 10^{-2}}{7.5182 \cdot 10^{-2}} = 1;$$

$$\frac{m_E}{m_M} = \frac{5.9736 \cdot 10^{24}}{7.348 \cdot 10^{22}} = 81.29 = \frac{g_M}{g_E}.$$

The expected matching between ratios is not appropriate at this stage of the parameters taken into account. It is necessary to take into account other parameters relating to the specific circumstances of this celestial masses duo under influence of the Sun.

3. DETERMINATION OF THE EFFECTS OF THE SUN AND OF OTHER PARAMETERS RELATING TO THE EARTH - MOON DUO

In addition, as in [1], it is to encrypt in the same way the relationship between the sizes of concerned flows in *O* without omitting to introduce, by Wien's law, the proportionality of their energy levels, i.e. a way to quantify the power of annihilation of a more energizing flow on an opposing less one. The Wien law enforcement seems to be a correct criterion in this sense.

For equivalent blackbody temperature of emissive elements of the Earth at 250°K [1] and, on the other hand, of the Moon at 159.5°K, using the law of Wien, the degree of efficiency of the terrestrial radiation compared to those of the Moon during their overlays in *O*. This value is *1.56* and, as in [1], it will multiply the terrestrial flow in *O*. The equivalence in energetic quality of this flow then becomes:

$$7.5254576 \cdot 10^{-2} \cdot 1.56 = 11.74 \cdot 10^{-2} \text{ W/m}^2.$$

Moreover the influence of the Sun can give, in favorable conjunctures of certain alignments, reflections of its radiation on the two bodies through the common area in *O*. With respect to the reflection of incident solar radiation by the Earth's atmosphere, the calculation is ($E_{\underset{Sun}{Sphere}}$ calculated in [1]):

$$E_{\underset{Sun}{Sphere}} = 4.804020258616771738 \cdot 10^{26} \text{ W};$$

$$E_{\underset{S-E/m^2}{Sphere}} = \frac{4.804020258616771738 \cdot 10^{26}}{4\pi(149591492700)^2} =$$

$$= 1708.36 \text{ W/m}^2.$$

This last value is what gets the upper part of the Earth's atmosphere. Moreover, the albedo of the Earth atmosphere is of about *0.3* and so, the atmosphere reflection by m^2, here will be energy of *512.5 W/m²*. Where this energy is reflected back to *O*, it will add to the following energy value $E_{\underset{(S-E)O/m^2}{Sphere}}$ to the intrinsic terrestrial ground flow arriving in *O*:

$$E_{\underset{(S-T)O/m^2}{Sphère}} = \frac{512.5 \cdot 4\pi \cdot (6378000)^2}{4\pi \cdot (3406449643)^2} =$$

$$= 0.17977 \text{ W/m}^2.$$

So the calculated estimate of energy flow emitted and reflected by the Earth and arriving in *O* is here the sum:

$$0.17977 \text{ W/m}^2 + 0.1174 \text{ W/m}^2 = 0.29717 \text{ W/m}^2.$$

With regard to the possible reflection of solar radiation by the Moon this can be done only by the soil because there is no lunar atmosphere. Then, a problem arises: is that the porous lunar surface actually absorbs solar radiation, but when it reemits, *this became a polarized radiation, which will not be able to interfere with natural light*. So this radiation, for example, passes through the black hole in *O* without incidence and, thus *it should not be taken into account here. It's as if there was only a single reflection of solar radiation arriving from the Earth.*

In addition, for the latter, its high energy value (compared to the IR already used in [1]), must be took onto account even if it is

weakened by his two reflections. This factor, calculated with the Wien law, is of 38, can be diminish, for example, at around 30. So the equivalence in balance energizing of the reflected solar radiation and arriving in *O* is: $0.17977 \cdot 30 = 5.3931$ W/m^2. The sum of the flow arriving in *O* in energy equivalence becomes: $5.3931 + 0.1174 = 5.5105$ W/m^2.

Also, very recent observations by LADEE have highlighted that there was a dense cloud of fine dust standing around the Moon: what will therefore reduce the transmission of radiation, mainly *IR,* of the lunar surface to *O*. Assuming that this transmission factor is around 0.9 that modifies all the emission black body flows from the Moon, that is: $0.075182 \cdot 0.9 = 0.06766$ W/m^2.

Then the calculated ratios of flows, after these refinements and additional calculations, becomes:

$$E_{\substack{Sphere \\ EO/m^2}} / E_{\substack{Sphere \\ NO/m^2}} = \frac{5.5105}{6.766 \cdot 10^{-2}} = 81.43;$$

$$\frac{m_E}{m_M} = \frac{5.9736}{7.348 \cdot 10^{22}} = 81.29 = \frac{g_M}{g_E}. \qquad (2)$$

The concordance between the results of the considered ratios is again highlighted for the Earth and its Moon satellite. This led to a new gravitation understanding where explanations of physical phenomena are formulated and correlated to the new physics of the EVTD[2] entities [11-15]. More, from the relationship (2) the following approximate equality are obtained the different relationships can be deduced:

$$E_{\substack{Sphere \\ EO/m^2}} / E_{\substack{Sphere \\ MO/m^2}} = \frac{m_E}{m_M} = \frac{g_M}{g_E}; \qquad (3)$$

$$m_E \cdot g_E = m_M \cdot g_M = F_{atracN};$$

$$E_{\substack{Sphere \\ EO/m^2}} \cdot g_E = E_{\substack{Sphere \\ MO/m^2}} \cdot g_M. \qquad (4)$$

We can detail the expression of the photonic flow report in *O*, the relation (3), if we write the global factor for each group (Global Earth GF_E, for example) as equal to the product of the factors: the transmission factor of the body atmosphere by the factor of the soil emissivity and, by the reflection factor if there is a radiation of a third body. In addition, it must multiply the most energizing radiation of both by the energy equivalence factor (F_E), using twice the Wien law, which leads, for example, to the expression: $F_E = T_E / T_M$. In the case of Earth-Moon, it will be the Earth radiation to be multiplied.

$$E_{\substack{Sphere \\ EO/m^2}} = \sigma T_E^4 \cdot \left(\frac{r_E}{OE}\right)^2 \cdot \frac{T_E}{T_M} \cdot GF_E;$$

$$E_{\substack{Sphere \\ MO/m^2}} = \sigma T_M^4 \cdot \left(\frac{r_M}{OM}\right)^2 \cdot GF_M.$$

Reporting these two expressions, it results:

$$E_{\substack{Sphere \\ EO/m^2}} / E_{\substack{Sphere \\ MO/m^2}} = \left(\frac{T_E}{T_M}\right)^5 \left(\frac{r_E}{r_M}\right)^2 \times$$

$$\times \left(\frac{OM}{OT}\right)^2 \frac{GF_E}{GF_M} = \frac{g_M}{g_E}.$$

So here it is more necessary to estimate the masses of the considered bodies to determine the ratio of reciprocal and sometimes potential of these massive body accelerations. It is enough to be able to measure the photonic flows equivalency of the bodies arriving in the area of the point *O*. This is, therefore, to determine their spectral distributions to apply the law of Wien. In the relationship of the photonic flow energies arriving in *O* it is enough to know: the distance between the masses, their solid rays and their balance black body temperatures of their emitting areas. In addition, it is necessary to have sufficient data to estimate at best the global factors of the various emitting areas environments of the concerned masses.

4. CONCLUSION

In the case of the Earth-Moon duo and, a little differently from the other eight cases of the duos of the Sun with each of its eight planets [1-2], results the most likely conclusion

of the existence of a mini black hole in each of the zero resulting potential between all pairs of masses. Indeed, the duo Earth - Moon cannot escape the influence of the Sun's gravitational photonic field: thus it becomes, whether we like it or not, *a trio of stars to consider*, that respects the reality of internal phenomena in the environment. Gravity by these facts, so highlight, should be able to settle from the concerned masses black body balance temperatures and from their environmental characteristics. These are the albedos of various atmospheric layers, the emitting layer properties, for example reemitted light polarization, etc. but also, the geometric data to use.

Thus here, unlike Newton, are not only considered the masses and their geometrical sizes but also other important parameters of the environment. The "engine" which is considered, for the gravity approach, is generated by a various work compacting and spacing of EMW, omnipresent throughout space-time, to induce these different phenomena on and around the zero resulting potential. It is proved that it is not, for example, the two masses who are attracted to each other but they are put into individualized approaches at different accelerations (for non-equal masses), towards a common point which is their zero resulting potential.

All this, once more, strongly and especially guide for the credibility of the physical entities $EVTD^2$-based.

Finally it could be that one day we could get rid of the uncertainty on the values of the celestial bodies' masses and to should take into account the characteristics of the environment in the calculation of the gravity. Including of the influence more or less disturbed of the radiation from the Sun in the entire solar system and also for example the impact of the asteroid belts or of Kuiper.

5. REFERENCES

[1] Conte M., Rosca I. *Quantic gravity $EVTD^2$ and photonic gravitational fields: existence of mini black holes to explain phenomena. The Solar system is a database, Part I: the Sun and the four planets close to it, in this very journal number*

[2] Conte M., Rosca I. *Quantic gravity $EVTD^2$ and photonic gravitational fields: existence of mini black holes to explain phenomena. The Solar system is a database, Part II: the Sun and the four planets beyond the asteroid belt, in this very journal number*

[3] Conte M., Rosca I. *Phenomena in bodies' freefall by $EVTD^2$ gravity in energetic quantic space-time formatting potentials in quantic energy levels,* Acta Technica Napocensis, Series: Applied Mathematics, Mechanics and Engineering Vol.58, Issue II, June, 2015

[4] Conte M., Rosca I. *Energetic and quantic potentials in values multiples of h, distributed on lengths adapted to the 6,048 ratio between the free fall on earth and moon, confirm their accelerations and the compaction process of the EMW in gravity quantum $EVTD^2$* . Acta Technica Napocensis, Series: Applied Mathematics, Mechanics and Engineering Vol.58, Issue II, June, 2015

[5] Rosca I., Conte M., *Sur l'émergence des trous noirs dans le cadre de la théorie des entités $EVTD^2$*, Acta Technica Napocensis, Series: Applied Mathematics and Mechanics, 51, Vol. I, 2008

[6] Conte M., Roșca I. *Zero resulting potential energetic and quantic in h initiate free fall and proximity of masses in quantic gravity $EVTD^2$. Design by substratum compacting mode (inter mass) depending on the EMW work,* Acta Technica Napocensis, Series: Applied Mathematics, Mechanics and Engineering Vol. 58, Issue III, September, 2015

[7] Roșca I., Conte M. *Gravity reconsideration in tri-quantum energetic space-time $EVTD^2$ where the potentials are expressed in h quantum energetics levels. Mass temperature above 0 K and the zero resulting potential has a major role with EMW* Acta Technica Napocensis, Series: Applied Mathematics, Mechanics and Engineering Vol. 58, Issue III, September, 2015

[8] Conte M., Rosca I. *An explanation of the bodies' free fall by the quanta bipolar gravity theory of EVTD*^{2}, 9th International Research/Expert Conference "Trends in the Development of Machinery and Associated Technology" TMT 2005, Antalya, Turkey, 26-30 September, 2005

[9] Conte M., Rosca I. *Theory of quanta double polar gravitation by the theory of EVTD*^{2} *– as it would be neither force nor a deformation but a space-time's vibratory work*, 9th International Research/Expert Conference "Trends in the Development of Machinery and Associated Technology" TMT 2005, Antalya, Turkey, 26-30 September, 2005

[10] Rosca I., Conte M., *Structuration des entités EVTD*^{2} *de l'espace – temps : assimilation à la gravitation bi polaire quantique et holographique,* Acta Technica Napocensis, Series: Applied Mathematics and Mechanics, 50, Vol. II, 2007

[11] Conte M., Rosca I. *Short presentation of EVTD*^{2} *entities theory*, International Workshop Advanced Researches in Computational Mechanics and Virtual Engineering 18-20 October, Brasov, Romania, 2006

[12] Conte M., Rosca I. *Introduction in a new mechanical theory of the universal space – time based on EVTD*^{2} *entities*, Acta Technica Napocensis, Series: Applied Mathematics and Mechanics, 50, Vol. II, 2007,

[13] Conte M., Rosca I. *Conception d'un espace-temps universel, quantique et relativiste : pour une physique de réconciliation.* Acta Technica Napocensis, Series: Applied Mathematics and Mechanics, 53, Vol.III, 2010

[14] Conte M., Rosca I. *Une histoire de famille : Photon, Graviton, X-on et compagnie*, Ed. Triumf, Brasov, Roumanie, 2002

[15] Conte M., Rosca I. *Physique de TOUT. Les EVTD*^{2}, Ed. Graphica, Brasov, Roumanie, 2004

Mini gaură neagră în potențialul rezultant zero pentru explicarea fenomenului de gravitație între Pământ și Lună. Fluxurile fotonice ale radiațiilor termice respective prezintă aici caracteristici ce sunt corelate cu atracția între cele două mase

Rezumat: Această lucrare este urmarea lucrărilor [1] şi [2], publicate în această revistă. Este vizată perechea Pământ şi satelitul său Luna. Soarele, omniprezent, trebuie să joace un rol în această conjunctură. Existența unei mini găuri negre în potențialul rezultant zero este din nou prevăzută împreună cu natura fotonică şi, deci, cuantică a câmpului gravitațional al maselor. În mod analog, se ajunge la aceleaşi corelații ca în [1-2] chiar dacă se ține seama de influența Soarelui în sistemul solar. Această lucrare arată, folosind din nou teoria entităților EVTD^2 şi date ale sistemului solar, că fluxurile fotonice ale maselor considerate, ce ajung la gaura neagră se află în acelaşi raport ca masele şi accelerațiile lor. Aceasta induce anumite corelații pentru diverse perechi de corpuri cereşti din sistemul solar şi aceasta indică noi direcții de cercetare pentru o înțelegere mai reală a gravitației ca fenomen fizic pe care nu o oferă fizica actuală. Într-adevăr, "motorul" gravitației este realist şi are meritul de a furniza o serie de corelații unde fenomenele fizice se îmbină armonios [3-4].

Ileana ROŞCA, Ph.D., Professor, Transylvania University, Design Product, Mechatronics and Environment Department, ilcrosca@unitbv.ro , Phone: 0040 744317171, 18/A/10, Bd. Gării, Braşov, Romania,

Michel CONTE, Ph.D., Honorary Professor of Transylvania University of Brasov, michelconte13104@gmail.com