PERIODIC UPDATES OF MY ARTICLE "On a Possible Logarithmic Connection between Einstein's Constant and the Fine-Structure Constant, in Relation to a Zero-energy Hypothesis" (Physical Science International Journal [PSIJ], ISSN: 2348-0130, Vol.: 24, Issue.: 5, pages 22-40)

*

DOI: 10.13140/RG.2.2.27118.43848 [URL-RG]
Article version: 1.0 (9.07.2020) (no matter this current paper version, its latest variant can be always downloaded from this URL; version 1.0 released on 9.07.2020)

*

Andrei-Lucian Drăgoi[1,2]
(independent researcher)

*

For motivation of this Wikipedia-based paper format, see URL;

*

Abstract
(with some highlighted abbreviations further used in this paper)

This paper contains some **periodic updates** of my article "On a Possible Logarithmic Connection between Einstein's Constant and the Fine-Structure Constant, in Relation to a Zero-energy Hypothesis" (Physical Science International Journal [PSIJ], ISSN: 2348-0130, Vol.: 24, Issue.: 5, pages 22-40: www.journalpsij.com/index.php/PSIJ/article/view/30191 and https://www.researchgate.net/publication/342530363) [**1**] which article continues (from alternative angles of view) the work of other past articles/preprints of the same author in **physics** [**2**, **3**, **4**, **5**, **6**, **7**, **8**, **9**, **10**, **11**, **12**, **13**, **14**, **15**, **16**, **17**, **18**, **19**, **20**, **21**, **22**, **23**, **24**, **25**, **26**, **27**, **28**, **29**, **30**, **31**, **32**, **33**, **34**, **35**, **36**].

***

I. The main section of this paper

The connection between my article and Brans-Dicke theory of gravity. Although I've not mentioned it in my article[**1**], note that my paper can be also regarded as a "patch"/"add-on" of the Brans–Dicke theory (**BDT**) of gravitation, a competitor of Einstein's theory of general relativity (**GR**) in which the gravitational interaction is mediated by BOTH **a big G-related scalar field** AND **the tensor field** of GR: more specifically, the gravitational constant G is not presumed to be constant in BDT, but instead $1/G$ is replaced by a scalar field ϕ **(which means that** $\phi = 1/G$ **, with variable G, thus variable** ϕ **)** which ϕ can vary from place to place and with time. Note (from my article [**1**]) that my "**electrogravitational resistivity of vacuum**" scalar (**EGRV**) has its value at rest (at macrocosmic scales) $R_0 \cong \kappa^{-1}\left[=c^4/(8\pi G)\cong 10^{43}N\right](\propto 1/G)$ (close to Planck force and interpreted as the inner tension of the spacetime fabric, which makes it a quite rigid "stuff" at Planck scales), thus we have $G_0 \cong c^4/(8\pi R_0)$ and the energy-scale dependent $G(E)\cong c^4/(8\pi R(\mathrm{E}))$, thus EGRV (with its value at rest $R_0 \propto 1/\mathrm{G}$) is a notion/concept similar to the scalar field $\phi(=1/G)$ of BDT: the main difference (between EGRV and ϕ) is that EGRV is stated (and predicted) to mainly (and hugely!) to vary with the length scale and just secondarily (and just minorly!) with the place and time. Maybe this connection between BDT and my article can help future researchers on BDT which may implement notions from my article in the Lagrangian of BDT and implement my logarithmic function (in which the fine-structure constant (**FSC**) $\alpha(\propto 1/\log_2(R_0))$ is extracted by using the Lambert W function to "shoot" both electromagnetism and gravitation at once and create a link/"synapse" between BDT (or GR) and quantum field theory (**QFT**) or quantum electrodynamics (**QED**).

**

How can virtual particle-antiparticle pairs (VPAPs) may offer an explanation on the exponential/logarithmic relation between the fine structure constant (FSC) and the gravitational coupling constant (GCC). My article [**1**] offers a plausible explanation on why FSC $\alpha(\propto 1/\log_2(R_0))$ is exponentially larger than the gravitational coupling constant (**GCC**) $\alpha_G\left(=\frac{Gm_e^{\,2}}{\hbar c}\cong 10^{-45}\right)(\propto 1/R_0)$ (which corresponds to the hypothetical gravitons): the movement of the photons is highly **FACILITATED** (based on an absorbtion-reabsorption process) by the charged virtual particle-antiparticle pairs (**cVPAPs**) which are generally heavier than neutral VPAPs (**nVPAPs**) (composed mainly from neutrino-antineutrino virtual pairs): given their much higher rest masses, these cVPAPs thus have a volumic concentration which grows progressively (and probably exponentially!) at smaller and smaller scales (close to Planck scales) so that EGRV decreases with the length-scale by this facilitation process of photonic movement (as described in my article). At progressively larger scales, the volumic concentration of cVPAPs abruptly drops to almost zero (because of their very short average lifetime, which is inversely-proportional to their higher rest masses) AND SO nVPAPs largely predominate at those larger microscopic and macroscopic [including macrocosmic] scales) and THAT IS WHY EGRV (which is proportional to the volumic concentration of nVPAPs that partially "screen" both photonic and gravitational waves) abruptly (and probably exponentially!) grows with the length scales. In other words nVPAPs act as "insulators" which increase EGRV with the length-scale (at which they predominate) and that's how my article explains the decrease of $\alpha(E)(\propto 1/\log_2[R(E)])$ (and $G(E)\propto 1/R(\mathrm{E})$) with a progressively large length-scale (at which $R(\mathrm{E})$ progressively increases). **An equation/formula which predicts the variable values of the ratio of the volumic concentrations of cVPAPs over nVPAPs (as a function of the length scale) will be an excelent update for a future version of my article.**

[**1**] **Email**: dr.dragoi@yahoo.com
[**2**] **Main pages**: dragoii.com (CV: cvrg.dragoii.com); rg.dragoii.com; academia.dragoii.com; vixra.dragoii.com; gsj.dragoii.com

**

An important remark on my zero-energy hypothesis (ZEH) and the past prediction of a macrocosmic Casimir effect created by black holes (BHs). In the past, I've also analyzed my zero-energy hypothesis (**ZEH**) from a totally distinct angle of view, in relation with the Pascual Jordan's famous "zero-energy universe hypothesis" (**ZEUH**) and named this ZEH-ZEUH "fusion" as an "extended zero-energy hypothesis" (**eZEH**) (see URLs www.researchgate.net/publication/329589169 and www.researchgate.net/publication/326785896): eZEH predicted the existence of **negative-energy photons and gravitons** and the existence of **a macrocosmic Casimir effect created by black holes** (**BHs**) in which the high rate of energy-mass compression inside a BH partially inhibits (by "volume loss") the spontaneous appearance of VPAPs inside that BH (which VPAPs need "free volume" to can appear at the first place, as also explained in my present article [**1**] by the concept of "practical radius" of any elementary particle), thus creates (by volumic "shrink") a huge gradient between the inner and outer VPAPs of that BH, a gradient which is predicted by eZEH to act as an additional compression (Casimir-)force on that BH, accelerating its further compression.

**

Another important remark on my zero-energy hypothesis (ZEH). Note that ZEH predicts that all EPs may be "conjugated" in boson-fermion pairs of "mass-conjugates" (which is a new type of physical symmetry proposed by ZEH (obviously distinct from supersymmetry [**SUSY**], but analogous to it) and produced by that balance between the strengths of electromagnetic and gravitational fields at Planck scales) with the rest masses of all known (and unknown!) elementary particles (**EPs**) being the conjugated solutions of this simple quadratic equation which allows all neutral EPs to have zero rest masses. Note that ZEH also predicts that spacetime is probably granular (and very viscous!) at Planck scale allowing $\phi_g\left(=G/r\right)$ and $\phi_e\left(=k_e/r\right)$ ratios with only discrete values approximately in the length-interval $\left[r_{\min}, 5\cdot 10^3 r_{\min}\right]$. If the quantum vacuum will ever be proved to be actually a fluid, ZEH predicts that vacuum may be granular and very viscous at scales close to Planck scales and that is why its movement and/or deformations may be governed by an equation similar to that of viscous flow, which equation (of viscous flow) is solvable by using a Lambert W function. Furthermore, ZEH predicts two elementary massless fermions (the here-called "Higgs-fermion" [**Hf**] and "Z-fermion" [**Zf**] which can be regarded as **elementary fermionic luxons (EFLs)**, NOT to be confused with Weyl fermions [which aren't EPs but quasi-particles]) as being the "mass-conjugates" of the Higgs and Z bosons potentially viable candidates for **both dark matter and dark energy**. Being zero-rest-mass fermions, these ZEH-predicted EFLs (Hf and Zf) are theorized to move with the speed of light in vacuum $c\left(\cong 3\times 10^8 m/s\right)$ (thus possessing only relativistic mass) and thus to have been spread by the Big Bang in all directions of space with speed c. Mainstream physics DOESN'T reject, in principle, the true existence of EFLs.

Any suggestion on possible experiments (that may confirm or infirm the existence of the ZEH-predicted EFLs Hf and Zf) would be greatly appreciated: I've also launched a Research Gate double-question survey on this aspect (see URL).

It would be also interesting to (at least theoretically) know if these Hf and Zf (EFLs) have a weak charge or not, thus if they couple with the weak nuclear field (WNF)/participate to the weak interaction (like all the other known fermions from the Standard model were proved to couple with WNF) or NOT.

**

An essential difference between the color charge (cc) and electromagnetic charge (emc). In contrast with the electromagnetic charge (**emc**) (which needs a minimal rest mass for any EP to "accommodate"/"store" that non-zero emc), the color charge (**cc**) can be "stored" on both zero-rest-mass bosonic EPs (like gluons) and non-zero-rest mass fermionic EPs (like quarks) which suggests/indicates that cc is somehow a more "primary"/"basic" phenomenon than emc (which appears as more "complex", because it implies a larger set of "conditions" for a non-zero emc to exist and manifest at the first place).

**

ZEH can be considered a very special type of supersymmetry (SUSY) and can also "accommodate" EPs with non-zero rest masses much smaller than the (non-zero) rest mass of the electron neutrino. The so-called sterile neutrinos (predicted by other theories) are thought to have non-zero rest masses and that is why the ZEH-predicted Hf and Zf are most probably NOT sterile neutrinos.

Although not mentioned in the article [**1**], ZEH can also accommodate super-light EPs (**SLEPs**) (defined as neutral EPs with finite positive non-zero and non-infinitesimal rest masses much smaller than the estimated non-zero rest mass of the known electron neutrino) because ZEH has a quadratic equation which may equal zero or very-very close to zero (but a positive finite and non-infinitesimal non-zero value).

ZEH establishes "mass-conjugation" between a boson and a "conjugated"-fermion and that is why ZEH has some resemblance with **supersymmetry** (**SUSY**) and can be actually considered a very special and unexpected type of SUSY in which some fermionic superpartners of the known bosons are actually "hidden under our noses" right in particles table of the Standard model: see the figures and tables of the article [**1**]. ZEH establishes the following conjugations: the W boson is conjectured/hypothesized (**hyp**) to be the mass-conjugate (**mc**) of the electron, the Z boson is hyp to be the mc of an unknown predicted EFL (called "Z-fermion" [**Zf**]), the Higgs boson is hyp to be the mc of an unknown predicted EFL (called "Higgs-fermion" [**Hf**]): in contrast, each of the 3 types of known neutrinos are proposed by ZEH to be the mass conjugates of the other bosons (the electron neutrino is actually the fermionic mc of the graviton, the muon neutrino is the fermionic mc of the gluon and the tauon neutrino is the fermionic mc of the photon). **In other words (and a checkpoint conclusion)**, ZEH proposes a very elegant alternative to (/subtype of) SUSY which DOESN'T need very many additional new EPs (as the "standard" SUSY does), BUT establishes an interesting symmetry (called here "mass conjugation") between many of the already known EPs, also predicting some new additional EPs (much fewer than those predicted by the "standard" SUSY however).

***

II. References

(partially integrated as Wikipedia URLs in the main text of this paper)

[**1**] Andrei-Lucian Drăgoi (June 29th, 2020). (FSC-EC-ZEH - PSIJ article - 29.06.2020) **On a Possible Logarithmic Connection between Einstein's Constant and the Fine-Structure Constant, in Relation to a Zero-energy Hypothesis,** Physical Science International Journal (**PSIJ**), ISSN: 2348-0130, Vol.: 24, Issue.: 5, pages 22-40, **DOI 10.9734/PSIJ/2020/v24i530191**. URLs: **URL1a**, **URL1b**, **URL1c** (PSIJ original sources); **URL2** (Research Gate source); **URL3** (Academia sources); **URL4** (Vixra source); URL5 (GSJ source). See also the following preprints: **URL-pp1**, **URL-pp2**, **URL-pp3** and **URL-pp4**.

[2] Andrei-Lucian Drăgoi (June 6th, 2020). (Strong ZEH - short version 1.0 - 6.06.2020 – 5.5 A4 pages without references) **A strong zero-energy hypothesis (ZEH) applied on virtual particle-antiparticle pairs (VPAPs) predicting a new type of boson-fermion symmetry/"mass-conjugation", two distinct types of massless neutral fermions and a strong gravity field (SGF) which is well-balanced in strength with an electromagnetic field (EMF) possessing asymptotic freedom at Planck length scales (short version)**. Research Gate preprint with DOI: **10.13140/RG.2.2.19726.38721**. **URL1a** (Research Gate main source), **URL1b** (Academia secondary source). **URL1c** (Vixra secondary source). **URL1d** (GSJ source). **URL1e** (**dragoii.com latest variant source**).

[3] Andrei-Lucian Drăgoi (June 5th, 2020). (Strong ZEH - long version 1.0 - 5.06.2020 - 13 A4 pages without references) **A strong zero-energy hypothesis (ZEH) applied on virtual particle-antiparticle pairs (VPAPs) predicting a new type of boson-fermion symmetry/"mass-conjugation", two distinct types of massless neutral fermions and a strong gravity field (SGF) which is well-balanced in strength with an electromagnetic field (EMF) possessing asymptotic freedom at Planck length scales (long version)**. Research Gate preprint with DOI: **10.13140/RG.2.2.18441.88165**. **URL1a** (Research Gate main source), **URL1b** (Academia secondary source). **URL1c** (Vixra secondary source). **URL1d**

[4] Andrei-Lucian Drăgoi (May 23rd, 2020). (EpiphenEMF - v.1.0 - 23.05.2020 - 7 A4 pages) **No electromagnetic charge and no photon without gravity: the electromagnetic field (EMF) as an epiphenomenon caused by the gravitational field (GF)**. Research Gate preprint with DOI: **10.13140/RG.2.2.18744.16645**. **URL1a** (Research Gate main source), **URL1b** (Academia secondary source). **URL1c** (Vixra secondary source). **URL1d** (GSJ source).

[5] Andrei-Lucian Drăgoi (March 24th, 2020; May 19th, 2020). (Essay for Gravity Essays Contest 2020 [finished and submitted on 24.03.2020; public copy released on 19.05.2020]) **On a possible logarithmic connection between Einstein's constant and the fine-structure constant, in relation to a zero-energy hypothesis**. Research Gate preprint with DOI: **10.13140/RG.2.2.15894.98886**. **URL1a** (Research Gate main source), **URL1b** (Academia secondary source). **URL1c** (Vixra secondary source). **URL1d** (GSJ source).

[6] Andrei-Lucian Drăgoi (March 28th, 2020). (IGH - version 1.0 - 29.03.2020 - 1.5 pages without references). An informational approach of Newton's law of gravity by using the Bekenstein bound and predicting a universe with at least 5 spatial dimensions. Research Gate preprint with DOI: **10.13140/RG.2.2.25419.75049**. **URL1a** (Research Gate main source), **URL1b** (Academia secondary source). URL1c (Vixra secondary source). URL1d (General Science Journal source). **URL1e** (dragoii.com latest variant source).

a. Andrei-Lucian Drăgoi (April 2nd, 2020). (IGH – short version - latest - 2.04.2020 - 1 A4 page). An informational approach of Newton's law of gravity by using the Bekenstein bound and predicting a universe with at least 5 spatial dimensions. Research Gate preprint with DOI: **10.13140/RG.2.2.19895.06567**. **URL1** (Research Gate main source).

[7] Andrei-Lucian Drăgoi (March 4th, 2020). (EGRV - version 1.0 - 4.03.2020 - 5.5 A4 pages excluding references) Integrating the speed of gravity in Newton's gravitational law, we're it probably… belongs: the universal gravitational constant (big G) is very plausibly not a true constant, but only a composite quasi-constant depending on a slightly variable speed of gravity and an electro-gravitational resistivity of (quantum) vacuum (EGRV). Research Gate preprint with DOI: **10.13140/RG.2.2.34832.35846**. **URL1a** (Research Gate main source), **URL1b** (Academia secondary source). **URL1c** (Vixra secondary source). URL1d (General Science Journal source). **URL1e** (dragoii.com latest variant source).

[8] Andrei-Lucian Drăgoi (February 24th, 2020). (MSTC-EP - version 1.0 - 24.02.2020 - 1 A4 page excluding references) A conjectured identity/equivalence between matter (including radiation) and spacetime curvature (STC) based on subquantum movement (SQM) explaining both inertial and gravitational masses and their equivalence/equality. Research Gate preprint with DOI: **10.13140/RG.2.2.30315.69928**. **URL1a** (Research Gate main source), **URL1b** (Academia secondary source). **URL1c** (Vixra secondary source). **URL1d** (General Science Journal source). **URL1e** (dragoii.com latest variant source).

[9] Andrei-Lucian Drăgoi (February 21st, 2020). (BGT - v.1.0 - 21.02.2020 - 3 A4 pages without references) A running coupling constant of a hypothetical quantum gravitational field (QGF) supporting a subtype of bimetric gravity theory (BGT) which implies two graviton modes: a super-massive one and a massless one. Research Gate preprint with DOI: **10.13140/RG.2.2.19607.11687**. **URL1a** (Research Gate main source), **URL1b** (Academia secondary source). **URL1c** (Vixra secondary source). **URL1e** (dragoii.com latest variant source).

[10] Andrei-Lucian Drăgoi (February 2020). (svEEC - v1.0 - 3.02.2020 - 2.5 A4 pages without references) **A strong variant of the ER=EPR conjecture based on Planck wormholes and redefining both big G and Planck constant**. Research Gate preprint with DOI: **10.13140/RG.2.2.25647.89762**. **URL1a** (Research Gate main source), **URL1b** (Academia secondary source), **URL1c** (Vixra secondary source), **URL1d** (GSJ secondary source), **URL1e** (**dragoii.com latest variant source**).

[11] Andrei-Lucian Drăgoi (February 2020). (FESTH - v1.0 - 2.02.2020 - 7.5 A4 pages without references) **A proposed set of relatively new conjectures and hypotheses in modern physics, mainly the concept of subquantum movement (SQM), the finite "elasticity" of spacetime hypothesis (FESTH), the self-repulsiveness of electromagnetic charge (SR-EMC) and the plausible gravitational significance of the fine structure constant (GS-FSC)**. Research Gate preprint with DOI: **10.13140/RG.2.2.36382.69441**. **URL1a** (Research Gate main source), **URL1b** (Academia secondary source), **URL1c** (Vixra secondary source), URL1d (GSJ secondary source), **URL1e** (dragoii.com latest variant source).

[12] Andrei-Lucian Drăgoi (January 2020). (QGR - v1.0 - 30.01.2020 - 11 A4 pages [without References]) (toy-model) **Sketching a new Quantum General Relativity (QGR) variant mainly based on the redefinition of leptons (as quantum micro black holes composed from highly compressed single triquarks under a very strong quantum gravitational field [QGF]), a dual electro-gravitational interpretation of the fine structure constant (FSC), Planck wormholes ("Planck tubes") and a reinterpretation of Planck units in the "spirit" of Einstein's GR**. Research Gate preprint with DOI: **10.13140/RG.2.2.15522.58567**. **URL1a** (Research Gate main source), **URL1b** (Academia secondary source), **URL1c** (Vixra secondary source), **URL1d** (GSJ secondary source), **URL1e** (dragoii.com latest variant source).

[13] Andrei-Lucian Drăgoi (December 2019). (GTM - long variant 1.0 - 19.12.2019 - 8.5 A4 pages without references section) **A simple Gravitational toy-model (GTM) mainly based on a new reinterpretation of the Newtonian/ universal gravitational constant (big G) which solves from "one-shot" the cosmological constant problem, the hierarchy problem, the dark energy problem and the singularity problem (GTMa, GTMb and GTMc)**. Research Gate preprint with DOI: **10.13140/RG.2.2.14361.77926**. **URL1a** (Research Gate main source), **URL1b** (Academia secondary source). **URL1e** (dragoii.com latest variant source).

a. (**GTM - short variant 1.0 - 19.12.2019 - 7 A4 pages without references section**). Research Gate preprint with DOI: **10.13140/RG.2.2.31138.99525**. **URL1a** (Research Gate main source), **URL1b** (Academia secondary source). **URL1e** (**dragoii.com latest variant source**)

b. (GTM - very short variant 1.0 - 19.12.2019 - 4.5 A4 pages without references section). Research Gate preprint with DOI: **10.13140/RG.2.2.25738.82885**. **URL1a** (Research Gate main source), **URL1b** (Academia secondary source). **URL1e** (dragoii.com latest variant source).

[14] Andrei-Lucian Drăgoi (July 2019). (SGUM - version 1.0 - 9.07.2019 - 10 pages) **A "Simply…Gravitonic" Universe (toy-)Model (SGUM).** Wiki-like Research Gate preprint. DOI: 10.13140/RG.2.2.28671.36003. URL1a (Research Gate source), URL1b (Academia source), URL1c (Vixra source), URL1d (GSJournal source).

[15] Andrei-Lucian Drăgoi (October 2019). (MUM - short version 1.0 - 22.10.2019 - 4 A4 pages without references) **A "Mirrored" Universe (toy-)Model (MUM) based on a relative big G, a variable quantum big G and a finite mass ambitus of our universe (short variant of the original full preprint)**. Research Gate preprint with DOI: **10.13140/RG.2.2.11788.05763**. **URL1a** (Research Gate main source), **URL1b** (Academia secondary source). **URL1c** (Vixra secondary source), **URL1d** (GSJ secondary source), **URL1e** (dragoii.com latest variant source).

[16] Andrei-Lucian Drăgoi (October 2019). (MUM – [long] version 1.0 - 21.10.2019 - 7 A4 pages) **A "Mirrored" Universe (toy-)Model (MUM) based on a relative big G, a variable quantum big G and a finite mass ambitus of our universe**. Research Gate preprint with DOI: **10.13140/RG.2.2.35738.18885**. **URL1a** (Research Gate main source), **URL1b** (Academia secondary source). **URL1c** (Vixra secondary source), **URL1d** (GSJ secondary source), **URL1e** (dragoii.com latest variant source).

[17] Andrei-Lucian Drăgoi (August 2019). (DRH – v 1.0 - 28.08.2019 - 4 pages A4) **A Dimensional Relativity Hypothesis (DRH)**, Research Gate preprint with DOI: 10.13140/RG.2.2.30254.87368. **URL1a** (Research Gate main source), **URL1b** (Academia secondary source), **URL1c** (Vixra secondary source), **URL1d** (dragoii.com latest variant source), **URL1e** (GSJ secondary source).

[18] Andrei-Lucian Drăgoi (August 2019). (ACUM - version 1.0 - 25.08.2019 - 7 pages) **An elegant Adimensional Cyclic Universe (toy-) Model (ACUM) mainly based on the electrograviton hypothesis (EGH), the quantized gravitational waves hypothesis (QGW-Hyp) and the dimensional relativity hypothesis (DRH)**. Research Gate preprint with DOI 10.13140/RG.2.2.13834.82881. URL1a (Research Gate main source), URL1b (Academia secondary source), URL1c (Vixra secondary source), URL1d (dragoii.com latest variant source), **URL1e** (GSJ secondary source).

[19] Andrei-Lucian Drăgoi (June 2019). (LifeAsEmergent - version 1.0 - 6 pages - 20.06.2019) **On the very low probability of complex life forms to be just emergent phenomena and about the "continuous" versus "intermittent" free will**. Wiki-like Research Gate preprint. DOI: 10.13140/RG.2.2.22592.58887. URL1a (Research Gate source), URL1b (Academia source), URL1c (Vixra source), URL1d (GSJournal source).

[20] Andrei-Lucian Drăgoi (April 2019). (LFs and gravity – working paper – variant 1.0 – 7 pages – 13.04.2019) **Life forms, "hybrid" causality, gravity and hierarchical parallel**

universes. Research Gate preprint. DOI: 10.13140/RG.2.2.19089.28009. URLs: URL1a (Research Gate source), URL1b (Academia source), URL1c (Vixra source), URL1d (GSJournal source).

[**21**] Andrei-Lucian Drăgoi (January 2019). (eSR – short version – 4 pages – 3.01.2018) **An extended Special relativity (eSR) containing a set of universal equivalence principles and predicting a quantized spacetime**. Research Gate preprint. DOI: 10.13140/RG.2.2.29665.35686. URL (Research Gate source).

[**22**] Andrei-Lucian Drăgoi (December 2018). (eSR – version 1.0 – 6 pages – 20.12.2018) **An extended Special relativity (eSR) containing a set of universal equivalence principles and predicting a quantized spacetime**. Research Gate preprint. DOI: 10.13140/RG.2.2.10208.53764. URL (Research Gate source).

[**23**] Andrei-Lucian Drăgoi (December 2018). (eZEH article-like preprint – version 1.0 – 8 pages -12.12.2018) **An extended zero-energy hypothesis predicting the existence of negative-energy gravitons and possibly explaining the accelerated expansion of our universe.** Research Gate preprint. DOI: 10.13140/RG.2.2.36245.99044. URL (Research Gate source).

[**24**] Andrei-Lucian Drăgoi (August 2018). (IP-GP – version 1.0 – 15 pages – 14.08.2018) **On the intrinsic paradox of the geometric point definition (solved using the Included Middle Logic) as the main cause of Euclid's postulate "inaccuracy", allowing the existence not only of non-Euclidean geometries but also of a new "t-metamathematics" used to redefine the basics of General relativity, Quantum field theory, Superstring theories and M-theory**. Research Gate preprint. DOI: 10.13140/RG.2.2.32439.42405. URL (Research Gate source).

[**25**] Andrei-Lucian Drăgoi (August 2018). (eZEH – version 1.0 – 10 pages – 2.08.2018) **An extended zero-energy hypothesis: on some possible quantum implications of a zero-energy universe, including the existence of negative-energy spin-1 gravitons (as the main spacetime "creators") and a (macrocosmic) black-hole (bh) Casimir effect (bhCE) which may explain the accelerated expansion of our universe**. Research Gate preprint. DOI: 10.13140/RG.2.2.31515.36642. URL (Research Gate source).

[**26**] Andrei-Lucian Drăgoi (September 2017). (FSC-TS – preprint – version 7.2 – 28 pages – 15.09.2017) **On a plausible triple electro-gravito-informational significance of the fine structure constant and its implications in a plausible four fields unification pattern at Planck scale and the existence of life forms in our universe**. Research Gate preprint. DOI: 10.13140/RG.2.2.13114.39365. URL (Research Gate source).

[**27**] Andrei-Lucian Drăgoi (May 2017). (version 1.1 – 12 pages – 5.06.2017) **A preonic toy model of all known elementary particles based on 1D and 2D branes**. Research Gate preprint. DOI: 10.13140/RG.2.2.26817.97123. URL.

[**28**] Andrei-Lucian Drăgoi (May 2017). (version 2.3 – 12 pages – 6.06.2017) **A cyclic toy model of the universe based on a quantized spacetime predesigned for life (technical essay)**. Research Gate preprint – Version: 2.3, In Progress. DOI: 10.13140/RG.2.2.22391.83369. URL (Research Gate source).

[**29**] Andrei-Lucian Drăgoi (April 2017). (version 2.0 – 28 pages – 9.05.2017) **A cyclic toy model of the universe predesigned for life, based on preonic quantized branes and a very strong 2D gravitational field as a candidate for a unified primordial field**. Research Gate preprint – Version: 2.0, In Progress. DOI: 10.13140/RG.2.2.24084.30087. URL (Research Gate source).

[**30**] Andrei-Lucian Drăgoi (February 2017). (BIDUM 3.2 full – Part A – 18 pages – last update on: 23.02.2017) **A Bio-Info-Digital Universe (toy-)Model – towards a transdisciplinary TOE centered on life phenomenon – Part A**. Research Gate preprint. DOI: 10.13140/RG.2.2.23869.26082. URL (Research Gate source)

[**31**] Andrei-Lucian Drăgoi (February 2017). (BIDUM 3.2 full – Part B – 20 pages – last update on: 23.02.2017) **A Bio-Info-Digital Universe (toy-)Model – towards a transdisciplinary TOE centered on life phenomenon – Part B**. Research Gate preprint . DOI: 10.13140/RG.2.2.35013.65760/1. URL (Research Gate source).

[**32**] Andrei-Lucian Drăgoi (September 2016). (BIDUM 3.1 beta version – 24 pages – data) **A toy model of the universe based on a large numbers hypothesis inspired by Edward Teller – towards a TOE centered on life phenomenon.** Research Gate preprint. DOI: (see other related DOIs 10.13140/RG.2.2.23869.26082 [URL2] and 10.13140/RG.2.2.35013.65760/1 [URL2]). URL (Research Gate source).

[**33**] Andrei-Lucian Drăgoi (May 2018). (DVTM – PSIJ – Short Research Article – 30.05.2018 – 19 pages) **(Toy-model) A Simple "Digital" Vacuum Composed of Space Voxels with Quantized Energetic States** (Physical Science International Journal [**PSIJ**], ISSN: 2348-0130, Vol.: 18, Issue.: 1). **DOI: 10.9734/PSIJ/2018/41391 (URL-CrossRef.org)**. URL0 (original source); URL1 (Research Gate source);

[**34**] Andrei-Lucian Drăgoi (July 2017). (PSIJ – Short Research Article – 29.07.2017) **On a Plausible Triple Electro-gravito-informational Significance of the Fine Structure Constant** (Physical Science International Journal [**PSIJ**], ISSN: 2348-0130, Vol. 15, Issue 3). **DOI**: **10.9734/PSIJ/2017/34613 (URL-CrossRef.org)**. URL0 (original source); URL1 (Research Gate source);

[**35**] Andrei-Lucian Drăgoi (November 7th, 2017). (PSIP cases – version 1.3 – 7.08.2018 – 19 pages) On some specific cases of PSI phenomena (not proved to be frauds until present) with possible electrogravitational explanations and transdisciplinary implications. Research Gate preprint. DOI: 10.13140/RG.2.2.21308.74885. URL1 (Research Gate source), URL2 (Academia.edu source), URL3 (Vixra source), URL4 (GSJournal source).

See also: (PSIP cases - version 1.4 - 13.08.2019 - picture selection) **An appearance found in four pictures taken at the grave of the Romanian orthodox priest Arsenie Boca,** DOI: 10.13140/RG.2.2.27378.66241

[**36**] Andrei-Lucian Drăgoi (January 30th, 2017). (PHI-E-PI – Version 1.6 – 12 pages – 30.01.2018) **A simple recursive geometrical construct method and some properties and occurrences of the Golden Ratio (Phi) in mathematics, physics, chemistry and biology (including human medicine), also related to the transcendentals PI and to Euler's constant e**. Research Gate preprint. DOI: 10.13140/RG.2.2.25312.69125. URL (Research Gate source).