

REVIEW ARTICLE

Remarks referring to my Poster Presentation at the 6th Edition of the Chemistry World Conference Barcelona, Spain 18-20 June 2026

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Abstract

Answering to the gentle invitation of Mr. Alexander Bradley, manager of the „6th Edition of Chemistry World Conference” held on June 18-20, 2026 in Barcelona, Spain, I participated in person with the Poster Presentation entitled „**The Etheronics starts with Chemistry and ends with Light, through Gravitation**”, awarded as Best Poster, in conformity with the next documents: 1) Conference Program, 2) List of my Short Syntheses, 3) Abstract of the Poster Presentation, 4) Certificat of Presentation, 5) Certificat of Recognition, 6) Congratulations BEST POSTER. The initial previsionsed Short Synthesis Nr. 45) entitled „**Structure of the Whole Periodic System within the New Etheronic Vision**” is proposed to present within the next Chemistry World Conference, previsionsed to held in June 21-23, 2027, in Rome, Italy.

1. Introduction

In the last years is remarcable an accentuate intensification of the searchings especially in the domain of the chemical sciences, but the main interest of the researches is directed towards the applied chemistry, in the context of the classical Periodic Table with 118 chemical elements approved by the International Union of Pure and Applied Chemistry (IUPAC) in 2013, in spite of publication of the Whole Periodic System in 2015 - 2016, with the suitable extendings (ss3).

The milestones of the evolution of the Chemistry as independent scientific branche are considered the first International Chemistry Conference organized in Karlsruhe in September 1860, and the approval in 2013 by the IUPAC of the Periodic Table with 118 chemical elements, doubling the number of the new discovered elements from the initial 59 attributed to Mendeleev (1869). However, this initial table with 59 elements was elaborated more earlier by Wolfgang Bolyai Farkas, along his 47 (or within the alternative history only 17!) years mathematics-physics-chemistry teacher/professor activity within the

Collegium/University in Neumarkt/Marosvásárhely/Targu-Mures, within the former Auastro-Hungarian Monarchy, before his death in 1856. Four years later, in February 1860, after the death of his son John Bolyai János, this single handwritten page with 59 elements was discovered between the inherited papers, arriving in hands of Karl Weltzien, a chemist recently moved from Sankt Petersburg to Karlsruhe. In May 1860 he convoked a meeting in Paris with the chemists Kekule from Ghent and Wurtz from Paris, deciding to organize the Chemistry Conference in Karlsruhe in September 1860, inviting the well-known chemists around the world. Weltzien made 3 handwritten copies, initially for Lothar Meyer from Breslau, William Odling from London and Wurtz or Bunsen, of which guest with a stipendium was Mendeleev from Sankt Petersburg. Besides him participated as attendants from this town the chemists Engelhardt, Fritch, Sokolov, Zinin, Borodin and Siskov. The general interest was so insignificant, that only Lothar Meyer and Reina Newlands (instead Odling) published some tables in 1864, respectively Mendeleev (instead Wurtz or Bunsen) in 1869 (see the annex). Otherwise, Wolfgang Bolyai is the true author of many mathematical and

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physical discoveries too, spreading around in the scientific world through Gauss, Riemann, Hilbert and many others, who transmitted or elaborated his ideas sketched immediately after receiving them from above (detailings later).

2. General Remarks

This Poster Presentation is based on many extensions, starting from the actually recognized **Periodic Table** of the 118 chemical elements which starts with the Hydrogen, to the **Whole Periodic System** with 558 elements, Gluon and Quark pre-elements and Etheron/Electron start-element, in invers quaternionic mathematical model form consisting as imaginary resultant of the three real interactional table components, namely long/chessboard-like, stepped/pyramidal and spiral/discoidal. The next extension refers to the application of this pattern elaborated on Physical level to the Subphysical (Etheric, Noethic, Tachionic) and Supraphysical (Astral, Universal, Multiversal) cosmic evolutionary levels, which constitute the **octavic** phase intercalated between the five **pentatonic** phases within the Big Cosmic Cycle.

The following extensions are based on the discovery of the ETHERONIC TESSERACT, as an answer to the privaling most basic question of the CORE-FIELD DUALITY, with possibility to penetrate into the higher and lower dimensions at the 3D. Really, the TESSERA ACT with meaning of FOUR RAYS is a pattern, namely the intersection of four strait light-rays/beams, but under different angles, namely $\sim 109.5^\circ$ in the case of the inner tetrahedral massive component, respectively $\sim 70^\circ$ in the case of the outer hexahedral/cubic wave component of the common edgeal unified basic Platonic solids, as fundamental unit of the WORLD-ALL from the most micro-cosmic to the most macro-cosmic evolutionary levels, and inverse (ss 47,48).

The discovery of the ETHERONIC TESSERACT was preceded by the first discovery of the ETHERON/ELECTRON to be a ROTATING TETRAHEDRON, and only as second step was discovered to be surrounded by the strong united HEXAHEDRON/HYPERCUBE in the 3D, this unity being realized through an inseparable COMMON EDGE, rotating together, forming a HYPERSPINOR with the common axis formed by the centers of both geometrical solids, these centers being the intersection points of both TESSERA ACTS, this HYPERSPINORIAL AXIS being perpendicular to the COMMON EDGE. This 3D ETHERONIC TESSERACT will form the model of the VERTEX-CUBES of the 8 VERTEX-FIGURES of

the 4D TESSERACT, without to repeat at the 5D and 6D TESSERACTS. Inside the 3D TESSERACT take place the 2D and 1D TESSERACTS, respectively the 0D Tesseract, the intersection point of the 4 light-rays, which form the skeleton of the 8-edgeal system, the GENERALIZED GRAVITATIONAL FIELD, inside which the 0D TESSERACT is its GRAVITATIONAL CENTER, and the circumscribed spheres the limits between its GRAVITATIONAL LEYERS. In this interpretation it don't exists a uniform gravitational field, like in Newton's vectorial and Einstein's tensorial equations*, within theirs unilateral interpretation referring exclusively only to the 3D medium.

Furthermore, penetrating inside the inner/core/massive ETHERONIC TETRAHEDRON, through successive turning inside out and outside in, we can distinguish the LIGHT/ELBU-, BIONIC- and NEURONIC QUASI-TETRAHEDRA, of which activating is in correlation with the outer gravitational leyers. In this context is remarcable the secular mistake committed by the Bose-Einstein duo, Gilbert N. Lewis and many others in 1926, designating the PHOTON as LIGHT-PARTICLE (!!!!) **instead of** GRAVITATION-PARTICLE (!!!!) and maintaining it till today (exactly 100 years!!!!), in spite of its correct presentation inside the DIRAC-EQUATION (1928).

The representation trials/approaches of the ETHERONIC TESSERACT – which include the Bose-Einstein Condensate (BEC) too – appear in form of SOLITON (J.S. Russel, Zeyu Rao et al), BREATHER SOLITON (D. Braun) or METRON (K. Hasselmann) MODELS, each of them accentuating parts of the whole system, but approaching the basic question from different points of view, far of the adequate solution for the description of this basic core-wave duality.

3. Special Remarks

Referring to the Bose-Einstein Condensate, this is a horseshoe on the dead horse! First of all, the idea of the ATOM is an erroneous concept, because the chemical elements aren't A-TOM, namely indivisible, so the idea of a **super-atom** can be only an idiocy (or a **super-idiocy**)!!!!

This losed one's way idea is a consequence of the secular error initiated by Bose and approved by Einstein designating the PHOTON as LIGHT-PARTICLE **instead of** GRAVIFIC-PARTICLE! The possibility of this error is explainable very clear based on my ETHERONIC TESSERACT model! Both particles possess a spherical form around a centre,

but while the center of the PHOTON/GRAVITON is the gravific center of the TESSERACT and its sphere is the circumscribed SPHERE of the TESSERACT, the center of the LIGHT-PARTICLE is the VERTEX of the TESSERACT, and the surrounding sphere is a LIGHT-BUBBLE with radius through the adjacent VERTEXES! Of course, this ETHERONIC STRUCTURING is similar by the ETHERONIC TETRAHEDRON too (ss 43,46).

Now, after a century erring/deviation, it's time to review and correct the whole scientific basement damaged especially by Einstein, who abused one's authority for misleading the whole scientific community and humankind, stopping in this manner the terrestrial evolution! His „prodigious shepherd activity” manifested starting with publication as author of the first and second paper-package in 1901-1904, respectively in the Annus Mirabilis 1905, continuing and culminating with „HIS” „brilliant” „masterwork” in 1915, after HIS unsuccessful stealing in 1914 within the TEKA/Library TELEKY from Targu Mures/Neumarkt/Marosvásárhely, Transylvania, sent by the actually shepherd donor David Hilbert for completing the missing explanations of the equation inherited from Wolfgang Bolyai Farkas, of which and his son's works being preserved here! The missing pages being (with due precaution) hid inside the Mathematics-Mechanics Faculty's library of the Bolyai University in Cluj-Napoca, Transylvania (one of both Josephin Universities, the another being in Budapest), finally Einstein published „HIS MASTERWORK” without the suitable mathematical foundation, which was completed in 2005 by IOVITZU and his Romanian Academician colleagues, some of **my workpages** being attached, but if somebody needs it, I can send the whole paper too (**Reconstruction of...**)^{*}.

Other less celebrated milestone in PHYSICS is the discovery of the **ETHERON** in 1982 by the Romanian Academician Ioan-Iovitz Popescu (favorite nickname IOVITZU), leading after 33 years to the differentiation of the cosmic evolutionary **octavic**, respectively **pentatonic** levels. Attached I present **my workpages (Principles of...)** of IOVITZU's explanation of this epoch-making discovery, which led finally to the idea of the new all-embracing scientific discipline called **ETHERONICS**, in correlation with the discovery of the **ETHERONIC TESSERACT**, as basic world-model, one kind COSMIC KEY (ss 41,42).

Before the differentiation of the cosmic octavic levels, the ETHERON was considered the start element of the ETHER, for this reason was proposed this

denomination by IOVITZU in 1982, but its discovered data led to the recognition that don't it is the smallest element of the PHYSICAL level (incorrectly called earlier ATOMIC), because its start element is the ELECTRON! In this situation was concluded/clarified the existence of the cosmic evolutionary **level series**, namely first the **TACHIONIC** (described by Gerald Feinberg in 1967, see the attached page), with the TACHIONS as supraluminous/„faster-than-light” particles with imaginary mass, as quaternionic resultant of 3 real massive components. The following was the **NOETHIC** level, discovered by the former astronaut Edgar Mitchell in 1971, after his cosmic travel within the Apollo 14 American mission^{**}, but preceded by the discovery in 1956 by Frederic Reines and Clyde Cowan of the NEUTRINO (considered to have mass!), as start element of the Noethic System, and rediscovered in 1984 by Eugen Macovski within his Biostructural conception and molecular theories of the living matter. The **ETHERIC** level was clarified/distinguished after many centuries of exploratory talks (referring especially to the luminiferous ETHER), till the discovery by IOVITZU in 1982 of the ETHERIC ETHERON! The ELECTRON – considered „well-known” from ancient times! – was rediscovered by John Dalton (1803), G. Laming (1838-1871), G.J. Stoney (1874-1891) and J.J. Thomson (1897), but recognized as **PHYSICAL Etheron** only 33 years after the discovery of the Etheric Etheron! The Galaxies as **ASTRAL Etherons** were detected in connection with the evolution of the optical and other instruments, so - after the pioneering researches of G. Galilei (1610) and I. Kant (1755) – the first catalogue was elaborated by Ch. Messier (1758-1795), followed by W. Herschell (1845), J. Kaptain (1920), E. Hubble 1923-1938) and others. The idea of Cosmic Cells as **UNIVERSAL Etherons**, as basic structural elements of a Cellular Universe appeared in the last decades, especially within the DSSU theoretical studies of C. Ranzan, but the cosmic cells of the outer boundaries with filaments led to formation of Voronoi cells/ **MULTIVERSAL Etherons**, of which system is very similar to the **neuron-network**. (ss nr. 16).

^{**}In 1972 he left the NASA, setting up and directing till 2016 the Institute of Noethic Sciences.

Generalizing the ETHERON as start element on every level, resulted the series of Tachionic, Noethic, Etheric, Physical, Astral, Universal, respectively Multiversal **Etherons**, the **Physical Etheron** being the **ELECTRON**, respectively – similarly to each cosmic evolutionary level – the **POSITRON**, in spite

of the representation of this symmetry only within the spiral table (48).

Starting from the 3D ETHERONIC TESSERACT, it's possible to penetrate into the lower and higher dimensional layers of both kinds TESSERACTS ($\sim 109.5^\circ$ and $\sim 70^\circ$) (study in course). On the right side of the Poster there are arranged the cosmic surroundings questions (later).

4. Conclusions

The Present Poster really is a very concise summarizing of our whole cosmic surroundings, starting from the presentation of the CHEMICAL Whole Periodic System of the PHYSICAL WORLD, a sketch of the new comprehensive scientific discipline called ETHERONICS, in form of ETHERONIC STRUCTURED CHEMISTRY OF THE PHYSICAL WORLD. This new conception based on the changing of the ATOMIC thinking with the ETHERONIC one means the transition from the disagreement to the togetherness, in cosmic context being expressed by multiple spiraling instead of simple/singular one, in mathematical form instead of **simple summing** like $1+2+3+4+5+6=21$, **factorial multiplication** like $1 \times 2 \times 3 \times 4 \times 5 \times 6 = 720$, this harmless difference in the case of **spinorial** or **hyperspinorial** evolutionary context meaning enormous **energetic** losing or winning upwards from the 3-Dimensional cosmic surroundings. This is expressed inside the graphic placed in the right lower corner of the right Poster.

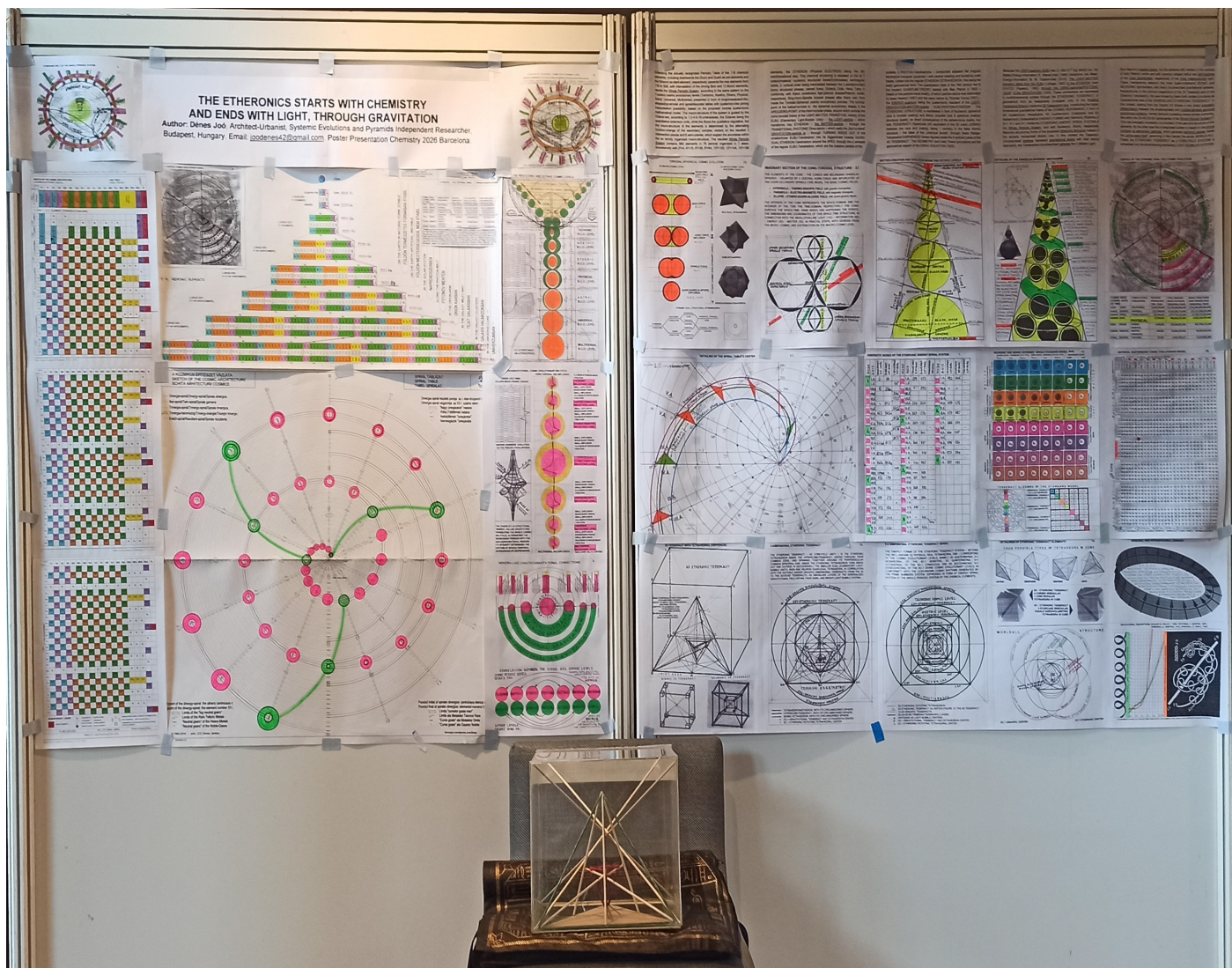
I consider opportune to accomplish the proposed research **Structure of the Whole Periodic System within the New Etheronic Vision** by the most competent scientist, namely the Eminent Chemist Professor Stanislaw Dzwighaj, of course in case of the true acceptance.

5. Annexes

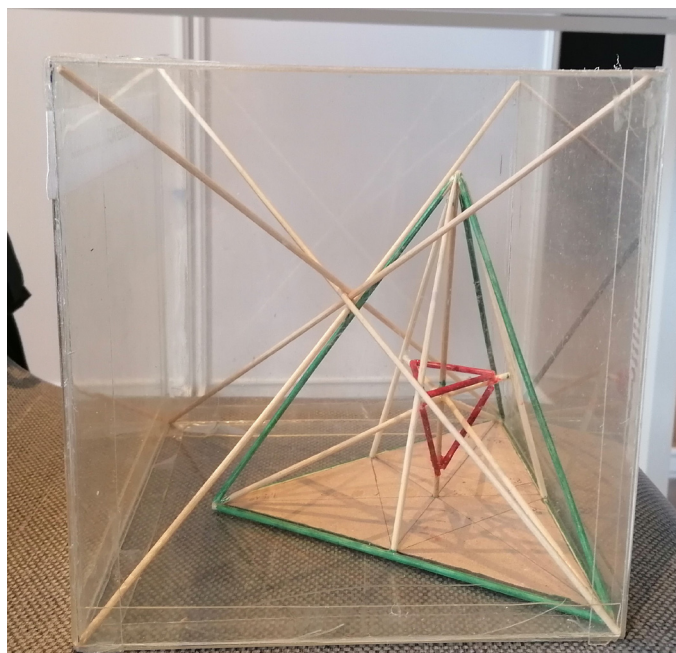
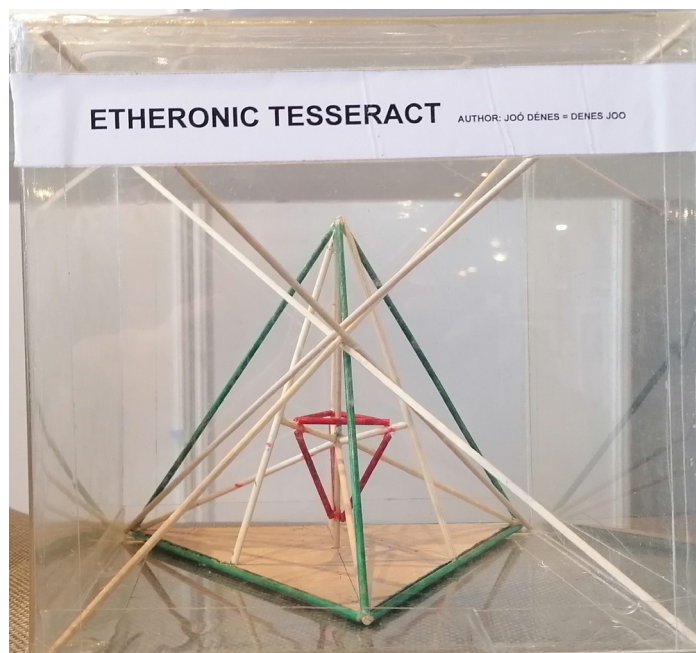
DENES JOO – LIST OF THE SHORT SYNTHESSES

- Golden Mean or/and Chaos?** (Mentorial Papers 4, ed. Varga Cs., Third Millenium Foundation Institute for Strategic Research Nagykovácsi, 1998; Hungarian in: The Future in the View of Hungary, HÉA Stratégiakutató Intézet; Short variant in: On the Eve of the 21st Century, Challenges and Responses, ed. by Gidai E., Akadémiai Kiadó Budapest, 1998).
- Cosmic Connections of the Pyramid Complexes– Guide for Pyramid Research** (ICB BOOK Proceedings, The First International Conference Bosnian Valley of the Pyramids, Sarajevo August 25-30, 2008).
- Sketch of the Cosmic Architecture (The Whole Periodic System)** (2nd World Chemistry Conference 8-10 August 2016 Toronto, Canada; blog denesjoo.wordpress.com, 2015).
- The Toroidal Atomic Structure in the Cosmic Evolution**, 16 September 2016 (unpublished).
- The Whole Fractal-Tetrahedral Code-System**, 25 September 2016 (unpublished).
- Toroidal-Hexagonal Structure on Macro-Cosmic Level**, 10 October 2016 (unpublished).
- A Conic-Toroidal Model of the Material World** (Materials 2017 Conference 20-21 February 2017 Berlin, Germany).
- Creation and Distribution of Matter in the Universe** (Materials 2017 Congress 12-14 June Rome, Italy).
- Life-Vision in Dürer's Masterpiece „Melencolia I”** (2nd International Conference on Biochemistry 2017 Conference UAE, Dubai, 28-29 September 2017; Nessa Publishers Journal of Chemical Engineering Volume 1, Issue 3, 22nd March 2018).
- The Whole Periodic City „Rosia Poieni”** (INCD URBAN-INCERC Conference Cluj-Napoca, 25-27 October 2017).
- How Up So Down** (Institute of Research Engineers and Doctors, USA – CSM 2018 Conference 28-29 April 2018, Zürich, Switzerland).
- Ether – Matter Transitions in the Universe** (7th International Conference of Smart Materials and Structures, 2-3 July 2018 Vienna, Austria; IJDR, Vol. 08, Issue 08, July 2018; Nessa Publishers Journal of Physics, Vol. 1, Issue 20, October 2018).
- Romanian Foresights in the New Europe** (INCD URBAN-INCERC Conference Bucharest, 5th October 2018).
- Bion – the Life-Particle Pattern (Beyond the Whole Periodic System)** (Poster Presentation Nr. 628/1410 – Session CT7 – IUPAC 2019 Congress 10-12 July 2019 Paris, France; Nessa Publishers Journal of Physics, Volume 1, Issue 27, 2019).
- Opinion about Covid-19** (sent to the ecmicrobiology.co.uk in April 2020, without answer).
- Etheronic Start of the Nucleonic and Bionic Structured Elements** (IJISSET – International Journal of Innovative Science, Engineering & Technology, Vol.7, No. 5, May 2020).
- Cosmic Evolution – Another Approach: Spherical-Toroidal Dynamic Duality in Higher Dimensions** (IJISSET, Vol. 7, No. 8, 2020).
- Proposal for the Organizing of the State Unions of Europe**, 7 August 2020 (unpublished).

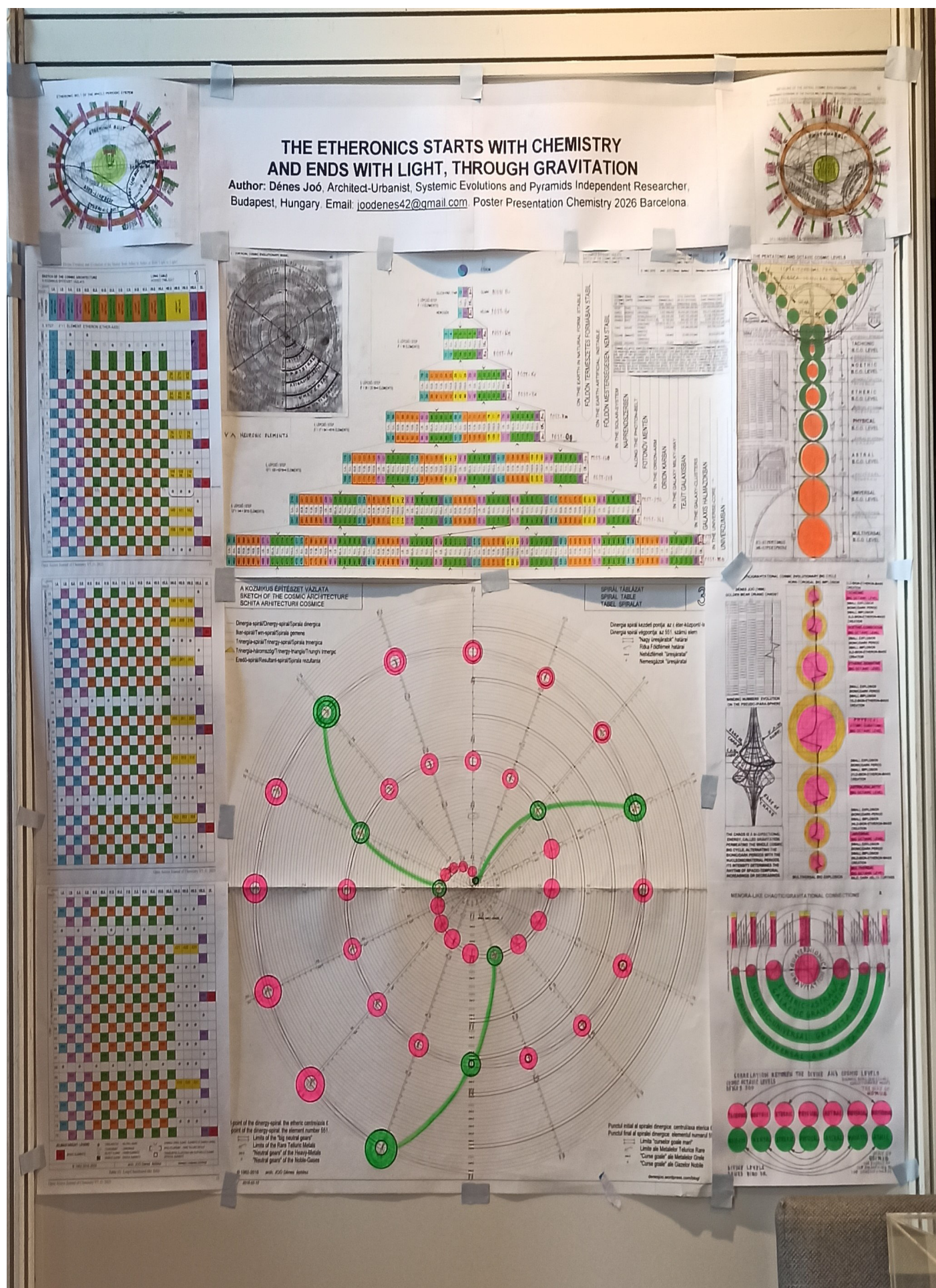
19. **Dual Material Structure on Every Cosmic Level** (Webinar on Smart materials and polymer technology, October 12, 2020).
20. **Dynamic Dual (DD) Cosmic Evolutionary Model Versus Big Bang (BB) and Eternal Inflation (EI) – DJED Pattern of the Cosmic Evolution** (Materials Science & Nanotechnology Webinar 19-20 October, 2020).
21. **DJED – The Almighty Cosmic Dinergic Energy** (IJSET, Vol. 7, Issue 12, December 2020).
22. **My Strange Vision in 6th August 2010: Sedna's Impact at Sedona** (IJSET, Vol. 8, Issue 5, May 2021).
23. **Three Impossible Visions** (IJSET, Vol. 8, Issue 5, May 2021).
24. **Chaotic Pattern of the Dynamic Dual (DD) Cosmic Evolutionary Big Cycle** (IJSET, Vol. 8, No. 5, May 2021).
25. **A New Cosmic Architectural Vision** (Journal of Chemistry & its Applications, Vol. 1, No. 3, 2022, pp. 1-33).
26. **Terrestrial Projections of the Cosmic Environmental Connections** (Journal of Chemistry & its Applications, Vol. 1, No. 4, 2022, pp. 1-29).
27. **The Etherons Are Created by the Rotating Lightwheels** (IJSET, Vol. 09, Issue 12, December 2022).
28. **What is Light?** (sent to the Nuclear Photonics Conference Durham, North Carolina USA September 11-15, 2023 in 30 June 2023, without answer).
29. **Quaternionic Mechanism Within the Micro-World** (IJSET, Vol. 10, Issue 07, July 2023).
30. **Etheron – Gluon – Quark – Bion** (IJSET, Vol. 10, Issue 08, August 2023).
31. **Etheronic Structure Instead of the Atomic One, Transition from the Atomic to the Etheronic Era** (IJSET, Vol. 10, Issue 09, September 2023).
32. **Matrix Representations – In Micro and In Macro** (IJSET, Vol. 10, Issue 10, October 2023).
33. **Terrestrial Projection of the Photon-Belt** (Journal of Chemistry & its Applications, Vol. 3, No. 3, 2024, pp. 1-27).
34. **The Big Secret of the Land of Luana in Romania** (IJSET, Vol. 11, Issue 06, June 2024).
35. **Cosmic Architectural Features of the Photon-belt, Djed-belt and Tjet-belt within the Iovitzu-Ionescu-Joo Model** (IJSET, Vol. 11, Issue 10, October 2024).
36. **Photonic Belt – Etheronic Belt** (prepared for the 7th international conference on Chemistry, November 11-12, 2024, Barcelona, Spain, withdrawal for mockery).
37. **Etheronic Structured Chemistry of the Physical World – ETHERONICS**. International Journal of Advanced Research in Chemical Science (IJARCS). 2024; 11(1):37-54. DOI: <https://doi.org/10.20431/2349-0403.1101004>.
38. **The Big Dilemma: Divine Creation and Evolution of the Matter from Ashes to Ashes or from Light to Light?** Open Access Journal of Chemistry. 2025; 7(1): 01-27.
39. **The Way of the Sun Along the Photon-Belt**. Open Access Journal of Chemistry. 2025; 7(1): 28-44.
40. **Black Holes – Wormholes – White Holes**. Open Access Journal of Chemistry. 2025; 7(1): 45-60.
41. **The Etheronics Starts with Chemistry**. Open Access Journal of Chemistry. 2025; 7(2): 01-21.
42. **The Etheron Is a Rotating Tetrahedron: Geometrical Foundation of the Etheronics**. Open Access Journal of Chemistry. 2025; 7(2):22-45.
43. **Inside the Electron as Physical Etheron**. Open Access Journal of Chemistry. 2025; 7(2): 46-61.
44. **The Etheronics Starts with Chemistry and Ends with Light, through Gravitation** (Poster Presentation Chemistry 2026 Conference Barcelona 18-20 June 2026).
45. **Structure of the Whole Periodic System Within the New Etheronic Vision** (Oral Presentation Chemistry 2026 Conference Barcelona 18-20 June 2026).
46. **Outside the Electron as Physical Etheron**. Open Access Journal of Chemistry. 2026;8(1): 01-22.
47. **Beyond the Etheronic Structured Chemistry of the Physical World**. International Journal of Advanced Research in Chemical Sciences (IJARCS). 2025; 12(2):47-67. DOI: <https://doi.org/10.20431/2349-0403.1202004>.
48. **The Genuine Relativity: More Inside and Outside the Etheron**. Open Access Journal of Chemistry. 2026; 8(1): 23-49. CH08010002.



1. Poster Etheronics with Etheronic Tesseract



Etheronic Tesseract





4. Author Architect-Urbanist, Independent Researcher Denes Joo



5. Author awarded by Chemist Stanislaw Dzwighaj, Professor of the Sorbonne University Paris, France



6. Certificate of Recognition, Certificate of Presentation, Congratulation BEST POSTER



7. Detailing of the Congratulation BEST POSTER

Supplementary Material



WE WISH TO MEET YOU AGAIN AT OUR UPCOMING EVENTS

22nd Edition of Global Conference on
Catalysis & Reaction Engineering (CAT 2026)
October 5-7, 2026 | Tokyo, Japan | Hybrid Event
<https://catalysis-conferences.magnusgroup.org/>

7th Edition of
Chemistry World Conference
June 2027 | Hybrid Event
<https://chemistryworldconference.com/>

Conference Hub



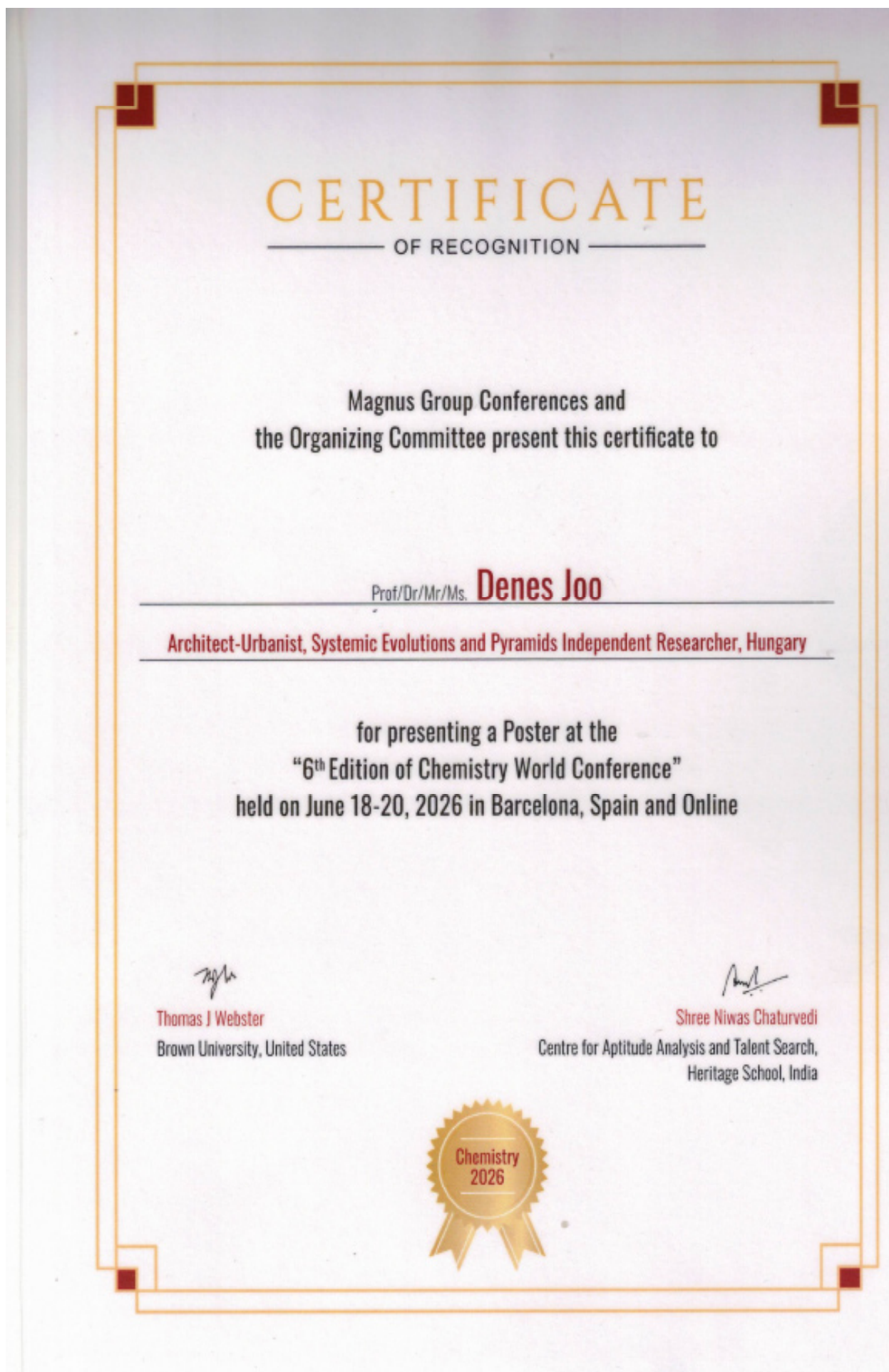
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Nicholas IONESCU-PALLAS*, Ioan-IOVITZ POPESCU** AND
Rudolf-Emil NISTOR***

A vizsgálattal az a feltehetően kifizetésnek tekintett
szingulárisból a térség felé irányuló mozgást
a térségbe való átvitel. Az idő pedig segít megérteni

Explanated

Clay Univ.
1969-70
1970-71

$$\sqrt{-g} = 1$$

middle = gauge

Spkwr 2020-12-27

N. Iovescu-Pallas, I. Iovescu-Popescu, R-E. Nistor

Az Einstein (Wolf Boyai = W/B) egyenletek
ek in totalmazzak? Tervid
Kigvordaisat, tes es idk felvesszeses

(which actually means that the elementary volume of the space-time manifold is not in any way changed by the presence of the gravitational field: $\sqrt{-g}cdt dx dy dz = cdt dx dy dz$), the first order approximation of the metric (that is the linear approximation in terms of the gravitational constant) is sufficient in itself for correctly evaluating the tests and no change is obtained by going over to the second order approximation (that is by performing calculations up to terms proportional to G^2). Thereafter, the metric is used in view of predicting the perihelion advance formula and the light deflection formula.

In the second work published by Einstein on 25-th November 1915, the field equations are given without demonstration. However, a justification of these equations can be done, by attentively pursuing the Einsteinian line of reasoning, namely, putting together the following requirements: 1) A linear relationship between three tensors, $R_{\mu\nu}$ - the curvature one, $T_{\mu\nu}$ - the matter one, and the combined tensor $g_{\mu\nu}T$ (T being the scalar of $T_{\mu\nu}$) is postulated based on the covariance principle. 2) The field equations $R_{\mu\nu} = -k(l_{\mu\nu} + ag_{\mu\nu}T)$, so obtained, must be submitted to two constraints a) the Newtonian law of universal attraction should be recovered in the classical limit, b) the Poisson equation should be recovered too in the same limit, 3) geodetic motion in the metric derived as a solution of the field equations is postulated as well.

First order approximation of the metrics

In this approximation the metric functions depend linearly on Newton's constant G and we have

$$(ds)^2 = g_{00}(r)(cdt)^2 + g_{jk}dx^jdx^k$$

$$g_{00} = 1 - K_0 \frac{GM}{c^2 r}, \quad g_{jk} = -\left(\delta_{jk} + \frac{1}{c^2} a_{jk}\right), \quad (1)$$

$$a_{jk} = \frac{GM}{r} \left(K_1 \delta_{jk} + K_2 \frac{x_j x_k}{r^2} \right), \quad (x^0 = ct, x^1 = x, x^2 = y, x^3 = z),$$

Einstein determined the three constants (K_0, K_1, K_2) using the field equations away of a punctual body, placed in the origin of an inertial frame of reference. For this purpose, he adopted a Cartesian coordinate system and, possibly, in order to spare graphical space, gives the result without any further demonstration, namely

$$K_0 = 2, K_1 = 0, K_2 = 2, \quad (2)$$

After some computation we conclude that, for $r \neq 0$, the term proportional to K_2 from the expression of the quantity $\Gamma_{jk,l}^l$ vanishes and, consequently, the only possibility to satisfy the condition $\Gamma_{jk,l}^l = 0$ is given by

$$K_1 = 0, \quad (7)$$

The metrics now becomes

$$(ds)^2 = \left(1 - 2 \frac{GM}{c^2 r}\right) (cdt)^2 - \left(\delta_{jk} + K_2 \frac{GM}{c^2 r^3} x_j x_k\right) dx^j dx^k, \quad (8)$$

and the remaining coefficient, K_2 , can easily be determined from the condition of field gauge $\sqrt{-g} = 1$, namely

$$K_2 = 2 \quad (9)$$

We conclude with Einstein that, in the linear approximation (showing a linear dependence of the metric functions on Newton's G constant) the metrics is completely determined and given by

$$(ds)^2 = \left(1 - 2 \frac{GM}{c^2 r}\right) (cdt)^2 - \left(\delta_{jk} + 2 \frac{GM}{c^2 r^3} x_j x_k\right) dx^j dx^k \quad (10)$$

2. THE GRAVITATION FIELD EQUATIONS

A week after the great success with the exact prediction of the perihelion advance of the Mercury planet, i.e. on November 25, 1915, Einstein publishes the field equations of the general relativity again without any demonstration of their deduction. Taking into account the relatively short time elapsed between the two events (November 18, 1915 for the explanation of the perihelion advance of planets; and November 25, 1915 for the obtainment of the field equations of the gravitation), we believe that these achievements are tightly and necessarily correlated. In November 1915, Einstein concluded that between the matter tensor, $T_{\mu\nu}$, and the curvature tensor, $R_{\mu\nu}$, of a chronotropic universe with a given mass distribution, a linear relation should exist. In a general form, required by the covariance principle, this relationship has the form

$$R_{\mu\nu} = -\frac{8\pi G}{c^4} (T_{\mu\nu} + \alpha g_{\mu\nu} T) \quad (11)$$

At the beginning of November, Einstein was still on the point to adopt the value zero for the coefficient α from the preceding equation. However, while

Insincere!
Nagy szelvényező!
swindling!
Diz

Einstein got the equations from David Hilbert.
Nobody understood them till 2005 (IOVITZU).
After Hilbert, he was the first officer of the "shepherds of the Sion".
Who elaborated them? {Farkas, Bolyai before 1856, Wolfgang}

Bolyai-Farkas, minden lejáró ötletét gyorsan lejegyzték egy oldalra, utolalt.
A papírgyártás akadozott és nagyon drága volt.
1812=Hilbert
1813=Lipson
1814=...
1815=Hilbert
1812-16
1812-16
1848-50 halban
1848-50 halban
1848-50 halban

considering the linear approximation of the metrics for the evaluation of the planet perihelion advance, he suddenly had an illumination („eine Erklärung“). Actually, he realized that that coefficient can be determined by analytical prolongation of metric functions inside the source, in the linear approximation and with the field gauge that earned him the success of November 18, 1915.

Let us return to the first of equations (6) and perform there the respective prolongation. We get

$$\Gamma_{00,k}^k = 2\pi K_0 \frac{GM}{c^2} \delta(\vec{r}) \quad (12)$$

In the given approximation and gauge, this result can be further transcribed as follows

$$R_{00} = -2\pi K_0 \frac{GM}{c^2} \delta(\vec{r}) \quad (13)$$

On the other side, with the help of equation (11), we can replace the quantity R_{00} from (13) with its equivalent expressed by merely physical quantities, namely

$$T_{00} + \alpha g_{00} T = \frac{1}{4} K_0 M c^2 \delta(\vec{r}) \quad (14)$$

$$\text{For } T_{\mu\nu} = M c^2 \delta(\vec{r}) \delta_{0\mu} \delta_{0\nu}, \quad g_{00} = 1, \text{ it results } 1 + \alpha = \frac{1}{4} K_0.$$

Taking further into consideration the condition of smooth joining of Einstein's field equations to Newton's gravitation theory for the non-relativistic case, which delivers $K_0 = 2$, it results

$$\alpha = -\frac{1}{2} \quad (15)$$

The field equations get their final form given by Einstein (November 25, 1915)

$$R_{\mu\nu} = -\frac{8\pi G}{c^4} \left(T_{\mu\nu} - \frac{1}{2} g_{\mu\nu} T \right) \quad (16)$$

These equations can be put in the equivalent form

$$R_{\mu\nu} - \frac{1}{2} g_{\mu\nu} R = -\frac{8\pi G}{c^4} T_{\mu\nu} \quad (17)$$

thus evidencing the conservativity of the tensor $T_{\mu\nu}$ as a consequence of the fact that the covariant divergence of the tensor from the left side of the equality (17) (called sometimes Einstein's tensor) is identically equal to zero.

scalar - Galileo
vector - Newton
tensor - Einstein
spinor - Dirac

Nature above vacuum

Summa, Egbet (Ed): Etherons as
Predicted by Ioan-Iovist Popescu
in 1982. (2015)

PRINCIPLES OF DISCOVERY OF ETHERONS

I.-I. Popescu

de mică etheron
ag. atomi BCl₃-Ga

1. Let's first consider a basic principle of physics, the Uncertainty Principle of Werner Heisenberg,

dealing principle

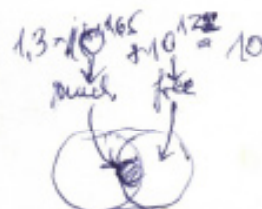
$$\Delta E \cdot \Delta t \geq \frac{1}{2} \hbar$$

$$\Delta x \cdot \Delta p_x \geq \frac{1}{2} \hbar$$

$$\frac{1.3494 \times 10^{-69} \text{ kg} \times 10^{12}}{3.1 \times 10^{25} / \text{m}^3 \times (10^{26})^3} < 4.189 \times 10^{14} \text{ m}^3$$

$$\frac{3.1 \times 10^{25} \times 10^{78}}{10^{16} \times 1.7623} < 4.189 \times 10^{65}$$

where ΔE is the uncertainty in the energy measurement and Δt is the uncertainty in the time measurement at the same time as the energy is measured; Δx is the uncertainty of the position measurement and Δp_x is the uncertainty of the momentum measurement in the x direction at the same time as the x measurement.



2. Let's extend the above energy-time uncertainty relationship, $\Delta E \times \Delta t \approx \hbar/2$, to the scale of the Observable Universe. Obviously, once accepted this extension to the Universe Age, that is $\Delta t \rightarrow \text{Universe Age} = 1/H$, where H is Hubble's constant, from the above uncertainty relation we get the most tiny energy quantum $\Delta E = m_E c^2 = \hbar H/2$, respectively the most tiny mass $m_E = \hbar H/2c^2$ that can exist. Its numerical value is thus $m_E = \hbar H/2c^2 \approx 1.3494 \times 10^{-69} \text{ kg}$, where Planck's constant $\hbar = h/2\pi = 1.0546 \times 10^{-34} \text{ m}^2 \text{ Kg/s}$, light velocity in vacuum $c = 299792458 \text{ m/s}$, and Hubble's constant $H \approx 2.3 \times 10^{-18} \text{ s}^{-1}$ (that is an Universe Age of $1/H \approx 4.35 \times 10^{17} \text{ s} \approx 13.8 \times 10^9 \text{ years}$).

time
condense form for
Peter Higgs diagram
mass in case diagram
beyond Higgs

3. On the other side, from the space-momentum uncertainty relationship, $\Delta x \cdot \Delta p_x \approx \frac{1}{2} \hbar$,

space

$$\frac{4.35 \times 10^{17} \text{ s} \times 1.0546 \times 10^{-34} \text{ m}^2 \text{ Kg/s}}{3 \times 10^8 \text{ m}} < 1.3 \times 10^{26}$$

$$R = \frac{c}{H} = \frac{3 \times 10^8 \text{ m/s}}{2.3 \times 10^{-18} \text{ s}^{-1}} \approx 1.3 \times 10^{26} \text{ m}$$

$$\frac{m_E c^2}{\hbar} \approx m$$

365 x 11.5 = 4200 nap
F = mc^2
F = v.h
Size
etheric BC level

extended to the Observable Universe of radius Δx
 $\rightarrow R = c/H$, we get the etheron momentum as Δp_E
 $= (\hbar/2)/R = \hbar/2R = \hbar H/2c = (\text{etheron energy})/c$.
 This is, indeed the relationship Energy-Momentum
 $p = E/c$ for extreme relativistic velocities. From
 here we conclude that etherons move with
extreme relativistic velocities at least in the free
cosmic space as considered above.

$$R = 1.3 \times 10^{26} \text{ m}$$

$$= 2.99 \times 10^{26} \text{ m}$$

$$= 2.3 \times 10^{18} \text{ s}$$

$$m/s = 5$$

free cosmic space
 bordered by the
 extending spirals
 towards surface.

4. To the above arguments we add that the
 considered 1982 etheron article (**this document**)
 is entirely based on six basic cosmological
relationships, namely

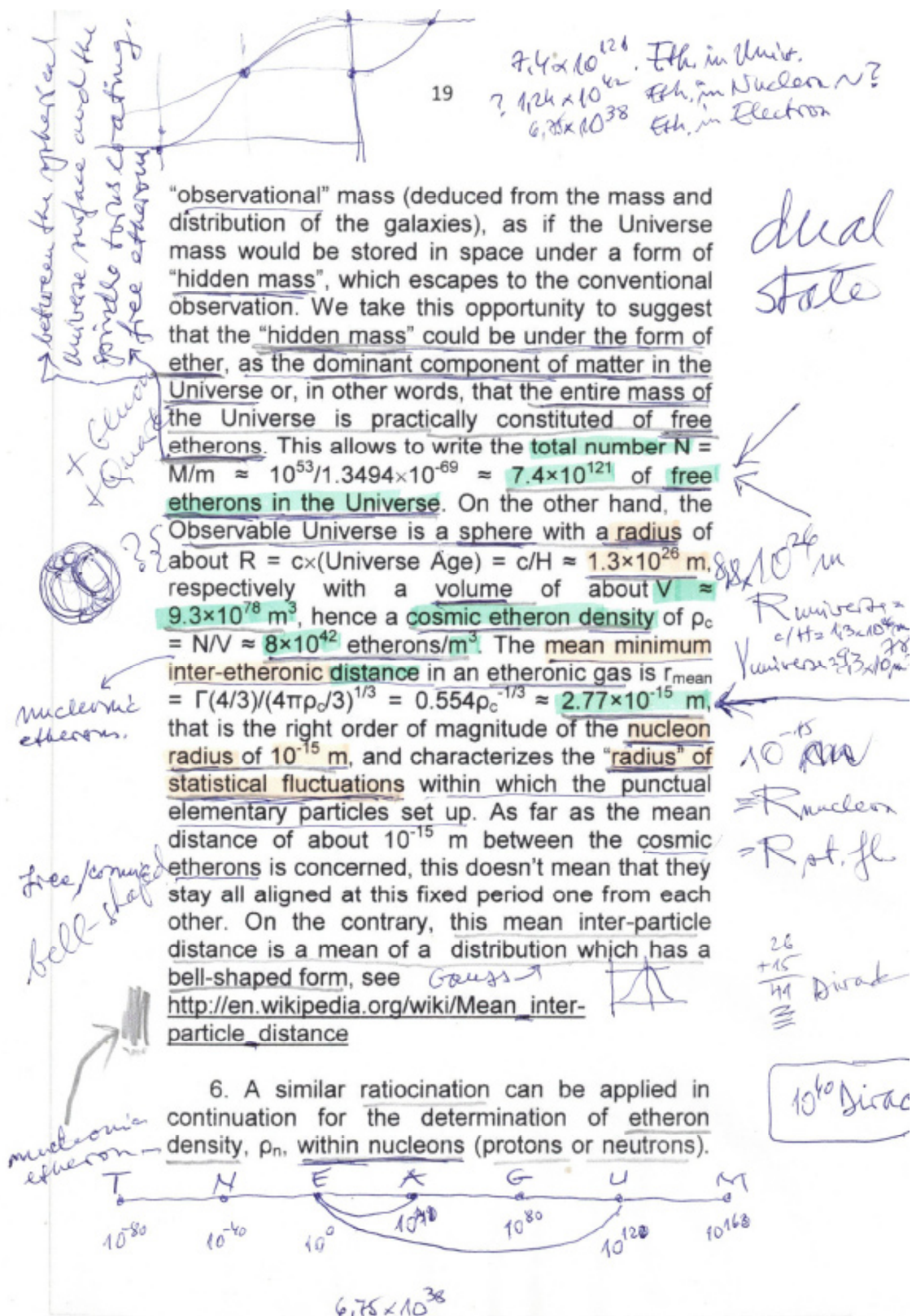
$m_E c^2 / \hbar H = k_1 = 1$	$GM/c^2 R = k_2$	$m_E c R / \hbar = k_3 = 1$	Eqs. (4-6)
$m_E c^2 / (\hbar^2 / m_E R^2) = k_4$	$r_E N_E^{1/2} / R = k_5$	$V / 2\pi R^3 = k_6$	Eqs. (7-9)

where the first and third equations (with $k_1 = k_3 = 1$) represent the uncertainty principle extended to the whole Observable Universe as discussed above. Generally, $k_1, k_2, \dots, k_6$ are non-dimensional constants of the order of magnitude of unity; ($c, \hbar = h/2\pi$) are the speed of light in vacuum and the reduced Planck's constant; (G, H) are Newton's constant, respectively Hubble's constant; (m_E, r_E, N_E) are the mass, dimension, and total number of etherons in the finite Universe; finally, (M, R, V) are the mass, dimension (that is the curvature radius), and the volume of the finite (but unbounded) Universe.

Bounded by the spirals towards

5. As it is known, the theoretical estimation of the Universe mass is $M \approx 10^{53} \text{ kg}$, about two orders of magnitude greater than the

$$1.5 \times 10^{53} \text{ kg} ?$$



$$\frac{2 \times 10^{-8} \text{ m}}{10^{-26} \text{ m}} = 50 \times 10^{18} \text{ m} = 5 \times 10^{19} \text{ m}$$

b
$P_8 = 10^{k3}$ $P_8 = 10^{k6}$ $10-17 \text{ m}^2$ $10-24 \text{ m}^2$ $10^{k3} + \mu$
e

$$\begin{aligned}\rho &= 10^{-70} / \text{m}^3 \\ \rho_m &= 4.2 \times 10^{80} / \text{m}^3 \\ \rho_e &= 10^{43} / \text{m}^3\end{aligned}$$

the reader the pleasure to compute the last number (that is 61) from the given radius of the etheron of 10^{-35} m and of the Universe radius of 10^{26} m. In simple words, our Universe is void of mass, though, paradoxically, it contains the huge mass of 10^{53} kg, but carried by 10^{122} etherons with negligible volume.

9. A slightly completed version of the first paper of 1982 on the etherons² has been published as a contribution to a book in 1983³. In continuation below is given the English translation of a fragment of the later (from pp. 22 – 24):

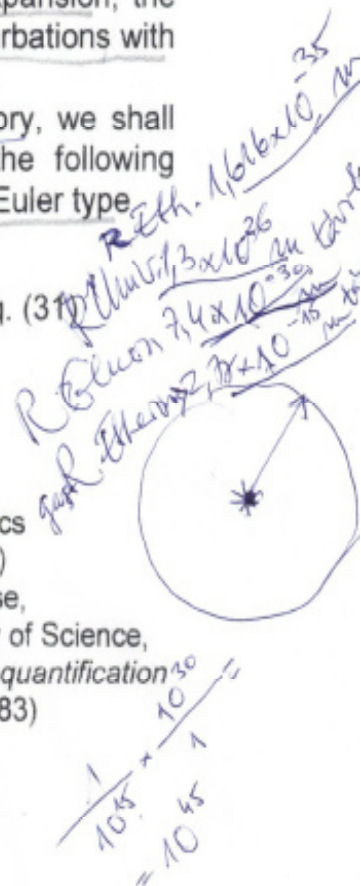
To this aim, for the future it remains to investigate the collective properties of the ether up to getting a set of relativistic hydrodynamic equations able to explain the fundamental phenomena such as the Universe expansion, the propagation of transversal small perturbations with light velocity, and the particle stability.

In the absence of such a theory, we shall tentatively assume the validity of the following simple hydrodynamic equation of the Euler type

$$m_0 n \left(\frac{\partial}{\partial t} - \vec{c} \cdot \nabla \right) \vec{c} = -\nabla p + \vec{f} \quad \text{Eq. (31)}$$

² the Romanian Academy journal of physics Stud. Cercet. Fiz., vol. 34, 451-468 (1982)

³ the Romanian Academy publishing house, Philosophical Approach on the Rationality of Science, Ioan-Iovitz Popescu, A hypothesis on the quantification³⁰ of the Universe: the etheron, pp. 9-32 (1983)



where m_0 is the etheron mass, n the etheron concentration, $p = (1/3)nm_0c^2$ the etheron pressure and $\vec{f}$ the friction force.

It is interesting to consider the hydrodynamic equation (31) of the ether by neglecting the friction force. Thus, denoting by $\rho(\vec{r}, t) = n(\vec{r}, t)m_0$ the ether density and with $\vec{\Gamma}(\vec{r}, t) = \rho(\vec{r}, t)\vec{c}$ the mass flux density, the movement equation of the mass of the unit volume can be written as

$$\frac{\partial \vec{\Gamma}}{\partial t} + (\vec{c} \cdot \nabla) \vec{\Gamma} = -\nabla p$$

or, multiplying by ρ ,

$$\rho \frac{\partial \vec{\Gamma}}{\partial t} = (\vec{\Gamma} \cdot \nabla) \vec{\Gamma} - \rho \nabla p$$

Using further the well known identity

$$(\vec{\Gamma} \cdot \nabla) \vec{\Gamma} \equiv \text{grad}(\Gamma^2/2) - \vec{\Gamma} \times \text{rot} \vec{\Gamma}$$

as well as the state equation for the ultra-relativistic fluid

$$p = (1/3)m_0nc^2 = (1/3)c\Gamma$$

the movement equation finally becomes

$$\rho \frac{\partial \vec{\Gamma}}{\partial t} \equiv -\vec{\Gamma} \times \text{rot} \vec{\Gamma} - \frac{2}{3} \text{grad}(\Gamma^2)$$

In this way, the condition for stationary states of movements ($\frac{\partial}{\partial t} = 0$) can be written solely by the field $\vec{\Gamma}$, namely

$$\vec{\Gamma} \times \text{rot} \vec{\Gamma} = \frac{2}{3} \text{grad}(\Gamma^2)$$

This is also the condition of stationary vortex formation in ether, i.e. of elementary particles. Remarkably, this is the analogous to the basic requirement for the magnetic confinement of hot stationary plasmas, a central problem of current researches in controlled thermonuclear fusion.

In other words, the above stationarity condition tells that, in each point of the space, the flow line $\vec{\Gamma}$ and its vortex line $\text{rot} \vec{\Gamma}$ are on an isobaric surface $p = \text{const.}$ (that is $\Gamma = \text{const.}$) passing through that point. Obviously, for spatially finite stationary movements occurring within particles or particle systems, the isobaric surfaces are closed ones, that is belong to the torus class. Moreover, within particles the etheron density should increase towards the interior of the isobaric surfaces, that is the vector $\vec{\Gamma} \times \text{rot} \vec{\Gamma}$ should be oriented towards the interior of these surfaces.

spindle tor?



An important class of particles is the one produced by small perturbations of the ether fluid, that is $\text{grad}(\Gamma^2) \sim \text{grad}(p^2) \approx 0$. This means that the "curvature radius" of these particles is very great so that $\vec{\Gamma} \times \text{rot} \vec{\Gamma} \approx 0$. They can be polarized dextrorotatory or levorotatory as $\vec{\Gamma}$ and $\text{rot} \vec{\Gamma}$ are nearly parallel or nearly anti-parallel. Photons are of course part of this class of particles with very small rest mass.



Possibility of Faster-Than-Light Particles*

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(Received 20 February 1967)

We consider the possibility of describing, within the special theory of relativity, particles with spacelike four-momentum, which therefore have velocities greater than that of light in vacuum. The usual objections to such particles are discussed, and they are found to be unconvincing within the framework of relativistic quantum theory. A quantum field theory of noninteracting, spinless, faster-than-light particles is described. The field theory is Lorentz-invariant, but must be quantized with Fermi statistics. The associated particle theory has the property that the particle number is not Lorentz-invariant, and the no-particle state is not Lorentz-invariant either. Nevertheless, the principle of relativity is satisfied. The Lorentz invariance implies a relation between emission and absorption processes, in contradiction to the usual case. Some comments are made about the problem of introducing interactions into the field theory. The limiting velocity is c , but a limit has two sides.

I. INTRODUCTION

IT is generally, although not universally,¹ believed that the validity of the special theory of relativity precludes the possibility of transmitting energy from point to point in space-time at velocities greater than c , the speed of light in a vacuum. The first statement to this effect appears in the first paper² of Einstein on the special theory. After pointing out that the relativistic formula for kinetic energy approaches infinity as $v \rightarrow c$ from below, Einstein concludes "... velocities greater than that of light ... have no possibility of existence." Other versions of this argument, as well as some others which will be considered later, are presented in the standard textbooks on relativity.³

It is the purpose of this paper to note that the standard arguments are not compelling in the context of relativistic quantum mechanics, with its characteristic discontinuous creation of particles. This has already been noted by other physicists.¹ The possibility of particles whose four-momenta are always spacelike, and whose velocities are therefore always greater than c is not in contradiction with special relativity, and such particles might be created in pairs without any necessity of accelerating ordinary particles through the "light barrier."

There are other problems with faster-than-light particles in relativistic quantum theory which arise from the fact that for a spacelike momentum vector, the sign of the energy can be changed by a Lorentz transformation, implying a more direct connection between

the positive- and negative-energy solutions of the wave equation than for timelike momenta. This connection has been thought to imply that faster than light particles would necessarily involve the existence of negative-energy states with their resultant unphysical properties. This is, however, not the case, and we shall see that the negative-energy solutions for faster-than-light particles can be dealt with in a way quite similar to that used for ordinary particles, i.e., these solutions are associated with creation operators instead of annihilation operators in a quantum field theory.

It is perhaps worth noting that particles which travel faster than light do not involve logical inconsistencies. Indeed, no observations can be logically inconsistent.⁴ To determine that a particle is moving faster than light it is only necessary to measure its position at two times and then calculate its velocity, by division, to be greater than c . None of these operations would seem to involve inconsistencies. Alternatively, one could measure the energy and momentum of the particle and note that

$$E^2 < p^2 c^2.$$

Such a measurement could easily be done for example in a bubble chamber. Because of the problems associated with localization of faster-than-light particles, to be discussed below, the latter alternative seems more promising for demonstrating their existence.

In this paper we begin the program of describing the properties that faster-than-light particles would have if they exist within the context of the special theory of relativity. Our considerations will be mainly restricted here to noninteracting particles, although I hope to return to the description of interactions of such particles at another time.

In the absence of such a description of interactions, it cannot be regarded as demonstrated that it would be possible to detect faster-than-light particles even if they exist. It is perhaps worth mentioning here that the problems involved in describing the interactions of faster-than-light particles within quantum field theory

* I am indebted to Dr. M. Tausner for this remark.

* Work supported in part by the U. S. Atomic Energy Commission.

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¹ For some dissents from the standard view, see O. M. P. Bilaniuk, V. K. Deshpande and E. C. G. Sudarshan, *Am. J. Phys.* 30, 718 (1962); S. Tanaka, *Progr. Theoret. Phys.* (Kyoto) 24, 171 (1960); G. Feinberg (unpublished).

² A. Einstein, *Ann. Physik* 17, 891 (1905).

³ See, e.g., D. Bohm, *Relativity* (W. A. Benjamin and Company, Inc., New York, 1965), p. 155ff.; P. G. Bergmann, *Introduction to the Theory of Relativity* (Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1942), p. 43ff.; C. Moller, *The Theory of Relativity* (Oxford University Press, London, 1952), p. 52ff.

field light 2 in vacuum
mass

gauge-field?
theory

Heisenberg?
(a)

Q → 8

and or
gauge f
theory

[illegible]