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Empirical Validation of the New "G-d's Physics" Paradigm of Twenty-First Century Physics

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Note: Dr. Bentovish is affiliated Zefat Academic Center, but is now seeking one of the leading Physics Universities in the World to further assist him in validating the New "G-d's Physics" Paradigm of 21st Century Theoretical Physics

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Abstract

Twenty-first century Theoretical Physics is undergoing a profound "Paradigmatic-Shift" from the Old "Material-Causal" Paradigm underlying Relativity Theory (RT) and Quantum Mechanics (QM) to the New "G-d's Physics" ("Computational Unified Field Theory", CUFT) "A-Causal Computation" Paradigm! This Paradigmatic-Shift ensues from the "Paradigmatic-Crisis" of the Old "Material-Causal" Paradigm signified by the apparent "theoretical-inconsistency" between RT & QM and its inability to account for up to 95% of all the mass and energy in the universe (e.g., assumed to comprise "darkmatter" and "dark-energy" purely hypothetical concepts, but which could not be detected empirically despite to decades of trying to do so!) The New "G-d's Physics" Paradigm resolves this apparent theoretical-inconsistency between RT & OM based on the discovery of a singular higher-ordered "Universal Computational/Consciousness Principle" (UCP), which simultaneously computes all exhaustive spatial pixels in the universe at the incredible rate of "c2/h" = 1.36-50 (sec'!), thereby producing an extremely rapid series of "Universal Frames" (UF's) comprising the entire physical universe at every such minimal time-point; Initial empirical validation of this New "G-d's Physics" Paradigm was provided by its unique "Critical-Prediction" associated with the "Proton-Radius Puzzle" stemming from its novel UCP's computational definitions of the four basic features of "space", "energy", "mass" and "time. The New "G-d's Physics" (CUFT) signifies a major advancement indicating an "A-Causal Computation" Paradigm and associated "Universal Computational Formula" (UCF) – which points at a complete unification: not only between RT & QM, but also between these four basic physical features, as well as between the Four Forces of Nature; Moreover, this New "G-d's Physics" Paradigm also challenges (and negates) specific key assumptions of the Old "Material-Causal" Paradigm including: the" Big-Bang" Model's "materialcausal" assumption, the existence of the (purely hypothetical) "dark-matter" and "dark-energy" concepts etc.; The New "G-d's Physics" Paradigm also calls for further empirical validation of additional unique "Critical-Predictions.

Background and Significance:

Twentieth century's Old "Material-Causal" Paradigm underlying both RT & QM has reached a state of a "Paradigmatic-Crisis" as defined by Thomas Kuhn's famous analysis of the "Structure of Scientific Revolutions" (1962) signified by an apparent "theoretical-inconsistency" between RT & QM and its principle inability to account for up to 95% of all the mass and energy in the universe assumed to comprise (purely hypothetical) "dark-matter" and "dark-energy" concepts - which could not be verified directly empirically despite two decades of trying to do so(?!) Fortunately, a New "G-d's Physics" (CUFT) "A-Causal Computation" Paradigm has been discovered (with over sixty peer-reviewed scientific articles published over the past nine years) which was shown capable of resolving this apparent RT-QM "theoretical-inconsistency" based on the discovery of a singular higher-ordered "Universal Computational/Consciousness Principle" (UCP) which simultaneously computes all exhaustive spatial pixels in the universe at the incredible rate of "c2/h" =

1.36-50 (sec'), thereby producing an extremely rapid series of "Universal Frames" (UF's) comprising the entire physical universe at every such minimal "time-point"! Based on the simultaneity of this singular UCP's computation of every exhaustive spatial pixel in the universe for each consecutive UF's frame, and the complete "dissolution" of the entire physical universe back into the singularity of this UCP, the New "G-d's Physics" "A-Causal Computation" Paradigm negates the very possibility of the existence of any (direct or indirect) "material-causal" physical interactions between any (two or more) exhaustive spatial pixels existing either in the same- or different- UF's frames; This was shown to negate the Old "Material-Causal" Paradigm's "Big-Bang" Model, assuming that it is an initial "nuclear event" that "caused" the creation of all the suns, galaxies, energy and mass of the universe, as well as the existence of the purely hypothetical "dark-matter" and "dark-energy" concepts assumed to "cause" the accelerated expansion of the universe!

In order to directly contrast between the New "G-d's Physics" (CUFT) Paradigm and the corresponding predictions of the Old "Material-Causal" Paradigm, "G-d's Physics" identified a unique "Critical-Prediction" stemming from its new "computational definitions" of the four basic physical features of "space", "energy", "mass" and "time" – based on the UCP's singular higher-ordered two "Computational Dimensions" of "Framework" (frame/object) and "Consistency" (consistent/inconsistent): According to this new UCP's Computational Dimensions definition of the "mass" of any given particle as an "object-consistent" computational measure:

M:
$$\sum [Oi\{o-x,o-y,o-z\} [UF(n)] = O(i...n\{o-x,o-y,o-z\} \{UF(i...n)\} / h * n\{UF's(i...n)\}$$

where the UCP's computational measure of the "mass" value of any given object is computed based on the number of times in which the "Object-consistent" "internal" {o-x,o-y,o-z} values across a given series of UF's frames remains constant (e.g., identical):

such that:

$$\begin{split} M \colon & \left[\operatorname{Oi}\{x,y,z\} \operatorname{UF's}(i) \right] - \operatorname{On}\{x,y,z\} \operatorname{UF's}(i\ldots n) \right] \leq \\ & \quad n * h \left[\left\{ \operatorname{UF's}\left(i\ldots n\right) \right] \end{split}$$

Wherein the UCP's computational measure of "mass" represents its computation of the number of UF's frame/s in which the "Object-consistent" internal values cannot exceeds a minimal increase based on a multiplication of the number of UF's frames by Planck's constant value.

"G-d's Physics" unique "Critical-Prediction" predicts that relatively "more-massive" particles such as the (negatively charged) "Muon" would be measured as more "spatially-consistent" than an equivalently (negatively charged) "electron" particle! This unique "G-d's Physics" "Critical-Prediction" was de-facto tested by the "Proton-Radius Puzzle" associated experiments conducted by Pohl et al. (2010).

1. Method & Results:

Pohl et al. (2010) set to measure the radius of a Hydrogen Proton – contrasting between the Standard Hydrogen surrounded by the (negatively charged) electron, and a "Muonic Hydrogen" in which its electron was replaced by a much more massive (negatively charged) "Muon" particle; Surprisingly, they found that the Proton radius was greatly decreased in the Muonic-Hydrogen, than in the Standard Hydrogen – which they termed as the "Proton-Radius Puzzle", because it could not be satisfactorily accounted for by Relativistic or Quantum Models?!

In contrast, these findings confirm and validate the unique "Critical-Prediction" of the New "G-d's Physics" Paradigm stemming from its abovementioned new UCP's computational definition of the "mass" of any given subatomic particle:

$$\begin{aligned} M &: \sum [Oi\{o\text{-}x,o\text{-}y,o\text{-}z\} \; [UF(n)] = \\ &\quad O(i...n\{o\text{-}x,o\text{-}y,o\text{-}z\} \; \; \{UF(i...n)\} \; / \; h \; * \; n\{UF\text{'s}(i...n)\} \end{aligned}$$

where the UCP's computational measure of the "mass" value of

any given object is computed based on the number of times in which the "Object-consistent" "internal" {o-x,o-y,o-z} values across a given series of UF's frames remains constant (e.g., identical).

This is because according to the New "G-d's Physics" UCP's computational definition of the "mass" value of any given subatomic particle, a more massive a particle possesses more "spatially-consistent" physical features - therefore predicting the "Critical-Prediction" of the relatively "more-massive" Muonic Hydrogen Proton possessing a more "spatially-consistent", i.e., smaller and more accurate, than the relatively "less-massive" electron-associated Standard Hydrogen Proton measurements! Noteworthy is the fact that this unique "Critical Prediction" of the New "G-d's Physics" Paradigm regarding the more "spatially-consistent" measurements of the relatively more massive "Muon-Hydrogen" as opposed to the relatively less-massive "electron-Hydrogen" - could not be accounted for by the Old "Material-Causal" Paradigm of RT & QM (e.g., despite various attempts to explain this "Proton-Radius Puzzle" findings: the "three-body force" (Karr & Hilico, 2012), interactions between gravity and the weak force, or a flavour-dependent interaction, (Onofrio, 2013; Zyga, 2013), higher dimension gravity, (Dahia, & Lemos,, 2016), a new boson, (McKeen & Miller, 2016) and the quasi-free hypothesis π^{\pm} (Lestone, 2017); and therefore constitutes a direct empirical validation of this New "G-d's Physics" (CUFT) Paradigm!

2. Discussion:

Hence, we see that the unique "Critical-Prediction" of "G-d's Physics" New "A-Causal Computation" Paradigm received direct empirical validation by Pohl et al's. (2010) "Proton-Radius Puzzle" findings, thereby providing initial direct evidence for the satisfactory acceptance of "G-d's Physics" as the New "A-Causal Computation" Paradigm for Twenty-first century Theoretical Physics! Amongst the potentially significant theoretical ramifications of this New Paradigm are:

a) The "Universal Computational Formula" (UCF) (extensively described previously):

Describes the manner in which this singular higher-ordered UCP simultaneously computes every exhaustive spatial pixels' four basic physical features of "space", "energy", "mass" and "time" – thereby completely unifying between these four physical features (for the first time)! This new UCF's complete unification of the four basic physical features was also shown to allow for the complete unification of the Four Forces of Nature!

Universal Computational Formula (UCF):

b) "G-d's Physics A-Causal Computation" New Paradigm:

The direct empirical validation of "G-d's Physics" Critical Prediction associated with the "Proton-Radius Puzzle" findings leads to the acceptance of its "A-Causal Computation" New Paradigm negating the previous Old "Material-Causal" Paradigm's basic assumptions of the "Big-Bang" Model, discards "dark-matter" and "dark-matter" (purely hypothetical concepts), and urges Physicists and Cosmologists/Astronomers to further validate "G-d's Physics" additional "Critical-Predictions" (previously delineated): a) Greater number of "Fine-Temporal Measurements" (FTM) of relatively "more massive" particles (such as the Muon), than for relatively "less-massive" particles (such as the electron); b)The "Universe's Non-Continuous Accelerated Expansion at the Jewish 'Rosh-Hashana'" (UNCAE-JRH) two-days special "Collective Human Consciousness Focus".

c) "G-d's Physics" Theoretical Ramifications:

The acceptance of "G-d's Physics" as a satisfactory New "A-Causal Computation" Paradigm for 21st century Physics inevitably leads to Science's revision of the Old "Material-Causal" Paradigm (of RT & QM): 1) The universe is being computed (created)- "dissolved"- re-computed- and evolved- at each of its constituting exhaustive spatial pixels (for every consecutive UF's frame/s) at the incredible rate of "c2/h" = 1.36-50 (sec')! 2) The basic "material-causal" assumption underlying RT's Einstein's Equations as well as QM's assumption regarding the "collapse" of the target's "probability wave-function" are challenged (and negated) pointing at the UCP's simultaneous computation of all exhaustive spatial pixels comprising every consecutive UF's frame/s. 3) Consequently, the recently discovered "G-d's Physics" "Ten Hierarchical Computational Dimensions - Universal Computational Formula" (THCD-UCF) which points at the UCP's "pre-panned" "Ultimate Geulah Goal" for the continuous evolution of the universe towards its "Perfected Moral, Spiritual and Physical State" in which the singularity, "Oneness", "Morality" and "All-Goodness" of this singular higher-ordered "Universal Computational/Consciousness Reality" (UCR) will be recognized by Humanity and Science!

3. References

- Bentwich, J. (2012a) "Harmonizing Quantum Mechanics and Relativity Theory". Theoretical Concepts of Quantum Mechanics, Intech (ISBN 979-953-307-377-3), Chapter 22, pp. 515-550.
- 2. Bentwich, J. (2012b) "Theoretical Validation of the Computational Unified Field Theory". Theoretical Concepts of Quantum Mechanics, (ISBN 979-953-307-3773), Chapter 23, pp. 551-598.
- 3. Bentwich, J. (2013b). "The Theoretical Ramifications of the Computational Unified Field Theory". Advances in Quantum Mechanics (ISBN 978-953-51-1089-7), Chapter 28, pp. 671-882.
- Bentwich, J. (2013c). The Computational Unified Field Theory (CUFT): A Candidate Theory of Everything. Advances in Quantum Mechanics (ISBN 978-953-51-1089-7) Chapter 18, pp. 395-436.
- Bentwich, J. (2015). The Computational Unified Field Theory (CUFT): A Candidate 'Theory of Everything'. Selected Topics in Application of Quantum Mechanics (ISBN 978-

- 953-51-2126-8) Chapter 6.
- 6. Bentwich, J. (2014) What if Einstein was Right? Amazon Kindle Book Store.
- Bentwich, J. (2015). On the Geometry of Space, Time, Energy, and Mass: Empirical Validation of the Computational Unified Field Theory. Unified Field Mechanics: Natural Science Beyond the Veil of Spacetime (Proceedings of VI-GIER IX Conference, Morgan State University, USA, 16-19 November 2014).
- 8. Bentwich, J. (2016) The 'Computational Unified Field Theory': A Paradigmatic Shift. Research & Reviews: Journal of Pure & Applied Physics.
- 9. Bentwich, J. (2017a) The Computational Unified Field Theory: Could 'Dark Matter' & 'Dark Energy' be "Superfluous"? SciFed Journal of Quantum Physics Special Issue.
- 10. Bentwich, J. (2017b) The Computational Unified Field Theory: Explaining the Universe from "Without". SciFed Journal of Quantum Physics Special Issue.
- 11. Bentwich, J. (2017c). The Computational Unified Field Theory: A New 'A-Causal Computation' Physics. SciFed Journal of Quantum Physics Special Issue.
- 12. Bentwich, J. (2017d). The 'Computational Unified Field Theory' (CUFT) May Challenge the 'Big-Bang Theory'. SciFed Journal of Quantum Physics Special Issue.
- 13. Bentwich, J. (2017e). Can the 'Computational Unified Field Theory' (CUFT) Challenge the Basic Laws of Conservation? SciFed Journal of Quantum Physics Special Issue.
- 14. Bentwich, J. (2017f). The Computational Unified Field Theory (CUFT): Time "Reversal" May be Possible. SciFed Journal of Quantum Physics Special Issue.
- 15. Bentwich, J. (2017g). The Computational Unified Field Theory (CUFT) Transcends Relativity's Speed of Light Constraint. SciFed Journal of Quantum Physics, Special Issue.
- 16. Bentwich, J. (2017h). The Computational Unified Field Theory's New Physics: Transcending Space, Time and Causality. SciFed Journal of Quantum Physics Special Issue.
- 17. Bentwich, J. (2017i). A "Supra-Spatial-Temporal Universal Consciousness Reality'. Research & Reviews: Journal of Pure & Applied Physics, Special Issue: The Computational Unified Field Theory (CUFT)- A Paradigmatic Shift in 21st Century Physics.
- 18. Bentwich, J. (2017j). A New Science: An Infinite Omniscient Dynamic-Equilibrium Universal Consciousness Reality. SciFed Journal of Quantum Physics Special Issue.
- Bentwich, J. (2017k). The Computational Unified Field Theory (CUFT) Challenges Darwin's 'Natural Selection Principle'! SciFed Journal of Quantum Physics Special Issue.
- 20. Bentwich, J. (2017l). The Computational Unified Field Theory (CUFT) Challenges the Second Law of Thermodynamics. SciFed Journal of Quantum Physics Special Issue.
- 21. Bentwich, J. (2017m). The Computational Unified Field Theory (CUFT): An Empirical & Mathematical Validation of the 'Computational Unified Field Theory'; SciFed Journal of Quantum Physics Special Issue.
- 22. Bentwich, J. (2017n). The Computational Unified Field Theory (CUFT) New Science; SciFed Journal of Quantum Physics Special Issue.

- 23. Bentwich, J. (2018a). Review: The Computational Unified Field Theory (CUFT) New Universe: The Global Journal of Science Frontier Research, Vol. 18 (8-A), Special Issue.
- 24. Bentwich, J. (2018b). The Computational Unified Field Theory (CUFT): What is "Time"? The Global Journal of Science Frontier Research, Vol. 18 (8-A), Special Issue.
- Bentwich, J. (2018c). The Universal Consciousness Reality's Camouflage: The Physical Universe! The Global Journal of Science Frontier Research, Vol. 18 (8-A), Special Issue.
- Bentwich, J. (2018d). The Computational Unified Field Theory (CUFT) Epilogue: Can Human Consciousness Affect the Cosmos? The Global Journal of Science Frontier Research, Vol. 18 (8-A), Special Issue.
- 27. Bentwich, J. (2018e). Testing the Computational Unified Field Theory's (CUFT) Differential-Critical Predictions: The Higgs-Boson Particle May Not Exist Continuously! The Global Journal of Science Frontier Research, Vol. 18 (8-A), Special Issue.
- 28. Bentwich, J. (2018f). The Double-Faceted Universal Consciousness Reality: A Theoretical Review. The Global Journal of Science Frontier Research, Vol. 18 (8-A), Special Issue
- Bentwich, J. (2018g). Letter to the Editor: Dark Matter May Not Exist. The Global Journal of Science Frontier Research, Vol. 18 (8-A), Special Issue.
- Bentwich, J. (2018h). The Computational Unified Field Theory's (CUFT) Epilogue: Possible Reversal of the Arrow of Time and Abolishment of Death. The Global Journal of Science Frontier Research, Vol. 18 (8-A), Special Issue.
- 31. Bentwich, J. (2019a). The Computational Unified Field Theory's (CUFT) New Universe. The Global Journal of Science Frontier Research, Vol. 19 (6), Special Issue.
- 32. Bentwich, J. (2019b). The Computational Unified Field Theory's (CUFT) Goes Beyond the 'Standard Model': "G-d's Physics"?!. The Global Journal of Science Frontier Research, Vol. 18 (8-A), Special Issue.
- 33. Bentwich, J. (2019c). A Call for Cosmologists & Experimental Physicists: Empirical Validation of the 'Computational Unified Field Theory' (CUFT) New Paradigm through "Time-Sensitive" Astronomical and Subatomic Measurements. The Global Journal of Science Frontier Research, Vol. 19 (6), Special Issue.
- 34. Bentwich, J. (2019d). The 'Computational Unified Field Theory' (CUFT): Redefining Mass, Gravity & the Physical Universe. The Global Journal of Science Frontier Research, Vol. 19 (6), Special Issue.
- 35. Bentwich, J. (2019d). Astronomical Validation of the Computational Unified Field Theory (CUFT) "Critical Prediction" & Resolution of the "Universe's Accelerated Expansion Rate Enigma" (UAERE). The Global Journal of Science Frontier Research, Vol. 19 (6), Special Issue.
- Bentwich, J. (2019e) Urgent Call for Empirical Validation of the Computational Unified Field Theory's (CUFT) New 21st Century 'A-Causal Computation' (ACC) Paradigm. Acta Scientific Applied Physics, Volume 1(1).
- 37. Bentovish (Bentwich), J. (2020a). 'G-d's Physics' (CUFT) New "Atom" & Purposeful Universe! Advances in Theoretical & Computational Physics. Volume 3 (2), p. 50-58.

- 38. Bentovish (Bentwich), J. (2020b). An Urgent Need for "G-d's Physics" New 21st Century Paradigm's Empirical Validation. Advances in Theoretical & Computational Physics. Volume 3 (2), p. 59-65.
- Bentovish (Bentwich), J. (2021). "G-d's Physics: A New Scientific Paradigm for the Twenty-First Century. iUniverse. ISBN 9781532090370.
- 40. Bentovish (Bentwich), J. (2021a). "G-d's Physics" New 21st Century Paradigm: From "Law" to "Mercy"! In World Journal of Pharmaceutical & Medical Research, Special Issue: "G-d's Physics New Twenty-First Century Scientific Paradigm: Empirical & Theoretical Ramifications (In Press).
- 41. Bentovish (Bentwich), J. (2021b). "G-d's Physics": From Arbitrary Physical & Biological "Evolution" Towards A Universal Consciousness Reality's (UCR) Directed Morally-Perfected ("Geulah h") Universe! In World Journal of Pharmaceutical & Medical Research, Special Issue: "G-d's Physics New Twenty-First Century Scientific Paradigm: Empirical & Theoretical Ramifications (In Press).
- 42. Bentovish (Bentwich), J. (2021c). "G-d's Physics": On the True Nature of "Dark-Energy" & "Dark-Matter". In World Journal of Pharmaceutical & Medical Research, Special Issue: "G-d's Physics New Twenty-First Century Scientific Paradigm: Empirical & Theoretical Ramifications (In Press).
- 43. Bentovish (Bentwich), J. (2021d). The New "G-d's Physics"
 New Twenty-First Century Paradigm: A Morally Perfected
 ("Geulah h") Directed New Physical Universe! In World
 Journal of Pharmaceutical & Medical Research, Special
 Issue: "G-d's Physics New Twenty-First Century Scientific Paradigm: Empirical & Theoretical Ramifications (In Press).
- 44. Bentovish (Bentwich), J. (2021e). "G-d's Physics": It's "Time" for "Geulah h "! In World Journal of Pharmaceutical & Medical Research, Special Issue: "G-d's Physics New Twenty-First Century Scientific Paradigm: Empirical & Theoretical Ramifications (In Press).
- 45. Bentovish (Bentwich), J. (2021f). "G-d's Physics" (CUFT) New Physics Paradigm: "Miracles" Can Happen!? In World Journal of Pharmaceutical & Medical Research, Special Issue: "G-d's Physics New Twenty-First Century Scientific Paradigm: Empirical & Theoretical Ramifications (In Press).
- 46. Bentovish (Bentwich), J. (2021g). "G-d's Physics" New 21st Century Paradigm: A Complete Integration of "Space" & "Energy", "Mass" & "Time"! In World Journal of Pharmaceutical & Medical Research, Special Issue: "G-d's Physics New Twenty-First Century Scientific Paradigm: Empirical & Theoretical Ramifications (In Press).
- 47. Bentovish (Bentwich), J. (2021h). "G-d's Physics": Complete Unification of the Four Basic Forces of Nature & "Geulah h"! In World Journal of Pharmaceutical & Medical Research, Special Issue: "G-d's Physics New Twenty-First Century Scientific Paradigm: Empirical & Theoretical Ramifications (In Press).
- 48. Bentovish (Bentwich), J. (2021i). Fulfilling Einstein's Quest: "G-d's Physics" New Twenty-First Century's Paradigm's Multi-Level Computational Universe. In World Journal of Pharmaceutical & Medical Research, Special Issue: "G-d's

- Physics New Twenty-First Century Scientific Paradigm: Empirical & Theoretical Ramifications (In Press).
- 49. Dahia, F.; Lemos, A.S. (2016). "Is the proton radius puzzle evidence of extra dimensions?". European Physical Journal. 76 (8): 435. arXiv:1509.08735. Bibcode:2016EP-JC...76..435D. doi:10.1140/epjc/s10052-016-4266-7. S2CID 118672005
- Karr, J.; Hilico, L. (2012). "Why three-body physics does not solve the proton-radius puzzle". Physical Review Letters. 109 (10): 103401. arXiv:1205.0633. Bibcode:2012PhRvL. 109j3401K. doi:10.1103/PhysRevLett.109.103401. PMID 23005286. S2CID 12752418
- Kuhn, Thomas S. (1962). The Structure of Scientific Revolutions (1st ed.). University of Chicago Press. pp. 172. LCCN 62019621
- 52. Lestone, J.P. (4 October 2017). Muonic atom Lamb shift via simple means (Report). Los Alamos Report. Los Alamos National Laboratory. LA-UR-17-29148.
- Liu Y, McKeen D, Miller GA (2016). "Electrophobic Scalar Boson and Muonic Puzzles". Physical Review Letters. 117 (10): 101801. arXiv:1605.04612. Bibcode:2016PhRvL. 117j1801L. doi:10.1103/PhysRevLett.117.101801. PMID 27636468. S2CID 20961

- 54. Onofrio, R. (2013). "Proton radius puzzle and quantum gravity at the Fermi scale". EPL. 104 (2): 20002. arXiv:1312.3469. Bibcode:2013EL....10420002O. doi:10.1209/0295-5075/104/20002. S2CID 119243594
- Pohl R, Antognini A, Nez F, Amaro FD, Biraben F, et al. (July 2010). "The size of the proton" (PDF). Nature. 466 (7303): 213–216. Bibcode:2010Natur.466..213P. doi:10.1038/nature09250. PMID 20613837. S2CID 4424731.
- 56. Pohl R, et al. (2016a). "Laser spectroscopy of muonic deuterium". Science. 353 (6300): 669–673. Bibcode:2016Sci...353..669P. doi:10.1126/science.aaf2468. hdl:10316/80061. PMID 27516595. S2CID 206647315.
- 57. Pohl R, et al. (16 September 2016b) "Proton-radius puzzle deepens". CERN Courier. After our first study came out in 2010, I was afraid some veteran physicist would get in touch with us and point out our great blunder. But the years have passed, and so far nothing of the kind has happened.
- 58. Zyga, Lisa (November 26, 2013). "Proton radius puzzle may be solved by quantum gravity". Phys.org. Retrieved September 2,2016.

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