
The Answer to Life, the Universe and Everything is not the Forty two of D. Adam's Hitchhiker's Guide to the Galaxy but it is the Golden Mean Square Root of Five Minus one Divided by two of S. Hawking's Micro Black Hole

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Abstract – This short paper is a forward looking, open minded highly general rationalization concerning a multitude of profound interrelations going back to the famous ancient Greek-Egyptian golden mean number system of Alexandria to modern E-infinity-fractal-Cantorian spacetime and the ingenious proposal of micro black holes made by S. Hawking and developed further by L. Susskind, G. 'tHooft and in recent times by the present Author and others.

Keywords – Micro Black Holes, S. Hawking, D. Adams, E-infinity, G. 'tHooft, L. Susskind, Brian Pippard, G. Bachelor, L. Prandtl, Golden Mean, Pre-Quantum Particle, Pre-Quantum Wave, Guiding Quantum Wave Theory, Golden Mean Number Systems, The Greek-Egyptian School of Alexandria.

I. PRELUDE

At this moment the Author is sitting in his office in London on 30th November 2020 at 9.30 in the evening to write his first paper after the Corona ordeal and its unprecedented lockdown.

This paper is concerned primarily with the Author's latest thoughts and flash insights gained in these hard but exceptional times when thinking was almost the only distraction from a highly disagreeable and partially boring existence.

The result, as the reader may hopefully find was all in all more than positive although the Author admits that he could happily and willingly have done without the whole shebang at this advanced age of a rather longish life and career in engineering, science and occasionally even international politics. The most important point which the Author hopes to convey to the prospective readers and particularly the young scientists, is the sense of our awe and excitement by unexpected insights via enlightenment like elation. This happened during a transcendental meditation state while the Cantorian-fractal spacetime theory unfolded in his conscious dreaming mind as well as his flowing and partially overwhelming emotions induced by equally overwhelming simple and compelling logic at the very same time [1]. This experience was in fact more of a dream in a dream. However and paradoxically so for the Author the experience was accompanied by unprecedented alertness. Strangely in,

Dedicated to the Memory of Professor Sir Alfred Brian Pippard

Searching for the most effective and appropriate non-mathematical, i.e. non-technical way to explain and convey the main message of the body of the paper, the Author was not able to find a more benefitting to this aim except the following two:

- a) Many readers may have heard and also seen the surreal video of Annie Lennox almost out of this world unreal reality as well as deeply romantic song ‘There must be an angel playing with my heart’ [2] and all that while Lennox is ‘walking in an empty room’, almost as the empty set pre-quantum wave of the Author’s E-infinity theory [3].
- b) Second we were virtually compelled to recall the most memorable sentence upon which the plot of Douglas Adams’ renowned best seller “The Hitchhikers Guide to the Galaxy” [4] is based which makes half of the title of this paper and asserts that the answer to life, the universe and everything, i.e. to all the three big questions of being is the golden mean of Stephen Hawking’s micro black hole and not the 42 suggested by Adams [4].

II. IN LIEU OF AN INTRODUCTION

The unforgettable Richard Feynman is said to have regarded ‘the things which do not fit’ as the most interesting in science. We for our part feel strongly that this wise uttering could no where be more obvious and true as it is with the notorious quantum wave collapse, i.e. the state vector reduction of quantum mechanics [3], [5]. As is well known, a substantial part of E-infinity Cantorian-fractal spacetime theory was actually devoted to this subject and as time has gone by, there were several sequential resolutions of this problem which may be summarized as follows:

- a) The first major breakthrough towards a realistic, i.e. non-miraculous non-metaphysical resolution of the quantum wave collapse as seen from our scientific point of view, came around when using the von Neumann-Connes pointless noncommutative geometry [6] combined with the deductive dimensional theory of K. Menger-P. Urysohn when the present Author conjectured and for the first time, that the quantum particle may be defined mathematically as being the zero set of the transfinite set theory and uniquely characterized by the new bi dimension [3], [4], [8] $D(O) \equiv (0, \phi)$ where $\phi = (\sqrt{5} - 1)/2$ is the golden mean as is clear from A. Connes’ by now famous formula [8] $D = a + b\phi$ where $a, b \in Z$ and $\phi = (\sqrt{5} - 1)/2$. The quantum wave or more accurately the pre-quantum wave on the other hand was recognised (in fact conjectured) also for the first time by the Author to be the empty set which although called empty, is a real existing set with far reaching consequences making it de facto the mathematical definition of the mysterious Aether of physics which in some folklore is supposed to have been banished by Einstein which is a widely held wrong view of fundamental physics [9]. This empty set is on the other hand mathematically the cobordism or simply the surface of the zero set which invites a mental picture reminiscent of the de Broglie-Bohm guiding wave theory and is given following the same dimensional function [8] by $D(W) \equiv (-1, \phi^2)$ where -1 is the topological dimension and ϕ^2 is the corresponding Hausdorff dimension of this set. Proceeding in this manner the mystery of dark and ordinary cosmic energy was dispelled and in our view completely resolved [10].
- b) A second equivalent resolution of the same quantum phenomena was achieved relatively recently via a radically different route based on fluid mechanics and specifically fluid turbulence theory developed by L. Prandtl, G. Bachelor and the golden mean spiral eddies [11] of the legendary engineering scientist T. von Karman. In this theory we proposed to regard the quantum wave as being a Prandtl boundary layer and the

interested reader may fill in the gaps in the present short summary by consulting the recent publications on the subject by the Author and his associates [12-13].

- c) In a very recent publication the Author and his group made a quantum and unexpected connection constituting unheard of simplification of the problem by invoking a rarefied version of black holes theory. This derivative of the classical black hole which relies fundamentally on S. Hawking, G. 'tHooft, L. Susskind and others insight about the nature of micro black holes [14]. In the ensuing section we will draw upon the most obvious and important conclusions of this latest of our research findings.

III. CONCLUSION AND PERSONAL RECOLLECTIONS

The Author for one thinks that the non plus ultra real pleasure in life is an informal discussion with a great mind of say an eminent scientist-thinker-artist with whom one could quarrel without falling out of friendship. Needless to say that one is of course permitted to agree with his discussion partner but it is when you do not agree and never the less remain respectful of each other's opinion that makes all the difference. In that respect the Author remembers such a delightful meeting with Prof. Sir Brian Pippard [15]. As we pondered and contemplated God and the universe, we came together to the point when Sir Brian started to explain why and when most leading scientists start to become 'crazy' at quite an old age although in younger days they were credited with making important and useful strides in their respectful fields. Fact is that at this somewhat dreaded old age phase, these very same scientists feel that it is time to redirect their attention and give meaning to life by solving its riddles and the mystery of existence. That way they start to talk in a language which the general scientific community and the feared main stream where according to Professor Achenbach of Tomas Mann's Death in Venice mediocracy resides, consider at best cryptic and at worst pure madness and a waste of precious time and energy. It is needless to say that the Author and Sir Brian think differently. This was the main thrust of our delightful discussion several decades ago as I remember and treasure it. On the other hand the Author's present concern in this regard is the hope that the article you are reading now does not fall into the 'category' of ancient old professors and research and if this is any consolation, we admit in all events that the article bears autobiographical elements which slipped in consciously or unconsciously and played a role in determining the form of the presentation of the work.

At the end of the day however, the main point of the present work is that we started with the golden mean number system as being the lingua franca of nature's very own mathematical tune which flourished with Pythagorean music and Platonic philosophy long ago in Alexandria [16-17] where Egyptian and Greek wisdom melted together into a coherent unit. From there we moved on to find physics but it did not stop there. In fact it was time after time a new beginning so we went all the way and discovered the connection with not only fluid turbulence but also micro black holes taking us to the beginning again, i.e. back to the future, namely the golden mean as an attractor and organizing center of physics and life [16-17]. The connectivity is actually startling since we have a number systems leading to Prandtl boundary layers and micro black holes all orbiting a deep, deep reality unifying art and science, body and soul and turning them into something closer than being two sides of the very same coin of glorious existence which we want to celebrate and be thankful for being part of it even though it is for a very short time by the standards of our cosmos.

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AUTHOR'S PROFILE



Professor M.S. El Naschie was born in Cairo, Egypt on 10th October 1943. He received his elementary education in Egypt. He then moved to Germany where he received his college education and then his undergraduate education at the Technical University of Hannover where he earned his (Dipl-Ing) diploma, equivalent to a Master's degree in Engineering plus being a professional chartered engineer. After that he moved to the UK where he enlisted as a post graduate student in the stability research group of the late Lord Henry Chilver and obtained his Ph.D. degree in structural mechanics under the supervision of Professor J.M.T. Thompson, FRS. After his promotions up to the rank of full professor, he held various positions in the UK, Saudi Arabia and USA and was a visiting professor, senior scholar or adjunct professor in Surrey University, UK, Cornell, USA, Cambridge University, UK and Cairo University, Egypt. In 2012 he ran for the Presidency of Egypt but withdrew at the final stage and returned to academia and his beloved scientific research. He is presently a Distinguished Professor at the Dept. of Physics, Faculty of Science of the University of Alexandria, Egypt. Professor El Naschie is well known for his research in structural stability in engineering as well as for his work on high energy physics and more recently for his work in cosmology and elucidation of the secret of dark energy and dark matter as well as for proposing a dark energy Casimir nanoreactor and a fuelless interstellar spaceship. He is the creator of E-infinity theory, which is a physical theory based on random Cantor sets and can be applied to micro, macro and mesoscopic systems. Professor El Naschie is the single or joint author of about one thousand publications in engineering, physics, mathematics, cosmology and political science. His current h-index is 83 and his i-10 index is 798 and total citations are 37400 according to Google Scholar Citation.