The joint virtual event of the
African Light Source AfLS2020
and the
African Physical Society AfPS2020

Contribution ID: **58** Type: **Poster Presentations**

TOWARDS ESTABLISHING SCIENTIFICALLY VALID PROOFS FOR MYTHOLOGICAL COSMOLOGY

Friday, 20 November 2020 17:25 (1 hour)

EXTENDED ABSTRACT
(General) cosmology (GC) - the scientific study of the origin, evolution and eventual consequence of the universe – may be broadly and conveniently classified into two major parts. These are physical cosmology (PC) and mythological cosmology (MC) (otherwise known as religious mythology) (Peebles, 1993; https://en.wikipedia.org/wiki). There is no doubt that worldwide research on cosmology has been almost totally concentrated on PC thus making many to perceive it as synonymous to GC, to the exclusion of MC (e.g. see Hawking and Penrose, 1996; Greene, 2000; Greene, 2005). There is no doubt that significant results on PC have been arrived at by contemporary cosmologists. As fundamental as the results of these great scientists are, the results are incomplete in describing the entire universe. This is due to the fact that substantial phenomena in the universe, which are hitherto called mystical, may only be explained and formally proved via intense research on MC. This aligns with the views of some physicists such as McKee (2004) who canvassed for intense research in MC to explain gaps in the present state of cosmological knowledge.
That is, conventional PC is limited in terms of scope, method of proof etc. PC focuses on the study of the material manifestation of the universe, with consideration given to motion of planetary objects. For instance, the big bang theory postulates the concept of the expansion (i.e. motion) of the universe via explosion about 15 billion years ago from an unimaginably energetic initial event (Rees, 1998; Khoury et. al., 2002; Tolley and Turok, 2002; Nature, 2019). As a result, methods of proof in PC rely on the traditional areas of applied mathematics, which essentially relate to fluid and solid mechanics. Earlier works on PC include Steinhardt and Turok (2002A; 2002B; 2005; 2006) where the authors advanced a radically new (physical) cosmology, called cyclic universe, in which the universe does not have a beginning or end (Also see Khoury et. al., 2004; Strege, 2010). They contended that what is known as creation is just a part of an infinite cycle of titanic collisions between our universe and a parallel world. Rees (1998) advocated that an infinite family of universes (called baby universes) may each have been created by its own big bang such that each universe acquires a distinctive imprint and its own laws of physics. In Hawking and Mlodinow (2010), the authors, among others, argued that both the theory of quantum mechanics and the theory of relativity assist in understanding how universes could have formed out of nothing. Peebles (1980) proposed the theory of cosmic structure formation.
The goal of the present author's ongoing research on MC as reported in the present paper is two-fold viz: (i) Provide scientifically acceptable proofs of the validity (or otherwise) of phenomena that are considered metaphysical (ii) Provide a unified cosmic theory which effectively integrates PC with MC. In accomplishing the above, a simplistic view in which existing metaphysical phenomena are considered equivalent to what is hitherto classified as science fiction, is adopted. It is well-known that many science fictions have now been scientifically realized. Classical examples of such are aircraft and drones/robots (Oluwade, 2020). Also, many acts performed by people known as magicians, which in the past appeared to the laymen to be beyond the physical have in contemporary times being revealed as mere manipulation and distortion of known physical principles e.g. see Den (2012). Some of these phenomena are sometimes described as 'African Science'. In addition, with advances in technology, including machine learning and artificial intelligence, many phenomena which could have been considered scientifically impossible are now made possible. For instance, in the movie/video industry, it is possible to watch the (recorded) video – with exact shape, voice etc - of a clinically dead person. Also, it is possible for a person who is physically present at a particular coordinate position to be invisible to another person who is close by. Furthermore, the interesting case of the hypothetical quantum computers which are now practically being realized is relevant (Feynman, 1982; Oluwade, 2002).
The author's ongoing effort in establishing non-trivial scientifically valid proofs for mythological cosmological phenomena is generally premised on the following principles in physics and (mathematical) philosophy, namely (McKee, 2004; Hospers, 1953; Russell, 1961):
(i) The wave-particle duality: By the author's model, the wave phenomena represent the spiritual/metaphysical part of the universe while the particle aspect represents the physical part of the universe.
(ii) Action-reaction duality: This means that for every spiritual/metaphysical manifestation, there is a corresponding physical manifestation, and vice versa. Thus, a fundamental knowledge about metaphysical phe-

nomena gives insight into physical phenomena, and vice versa.
(iii) Cause-effect duality: This emphasizes, for instance, that every effect of a physical event has a cause, and by investigating the effect, one tends to have insight into the cause. The author's conjecture, which he is working on, is that every physical effect has a cause which can be traced to the metaphysical realm.
In particular, the author's research activities involve the integration of PC and MC towards a new grand cosmic unification theory. The major instrument of mathematics used is modeling, whereby metaphysical phenomena are reduced to mathematical relationships. Formal proofs or otherwise of the validity of these phenomena are then established on a case by case basis. However, unlike PC - whose nature of research revolves round dynamical systems, fluid mechanics, heat and mass transfer vis-à-vis the study of motion of heavenly bodies - MC uses distinct mathematical methods. Such methods are naturally drawn from areas like Abstract Algebra, Real/Complex Analysis and Fuzzy Logic/Set. These are part of the rich repertoire of acceptable standard methods of proofs in mathematics, notable among which are method of deduction, proof by contradiction, use of a counterexample, proof by hypothesis and mathematical induction (Oluwade, 2006). Essentially, full deployment of mathematics as a revealer, harbinger and purveyor of 'truth and beauty' (Russell, 1919) is being pursued. The mathematical methods are then supported with scientific and thought experiments.
Previous works of the author relating to MC include Oluwade (2001) where the well-known general communication system of coding and information theory is used to model metaphysics. That is, a metaphysical phenomenon is modeled as a 6-constituent process, namely Source, Transmitter (or Encoder), Channel, Noise, Receiver (or Decoder) and Destination. The paper is a poster presentation at the 2001 Forum and Annual Meeting of The Sigma Xi, The Scientific Research Society, USA. Although the author was originally invited as an international guest speaker (on Science and Engineering Policy and Development in Developing Countries, with emphasis on Nigeria), he used the opportunity to also make a poster presentation on MC. In Oluwade and Longe (2003), the authors established parallels between the conventional computer binary codes and Ifa Divination codes. Ifa Divination is an ancient mythological practice of the traditional Yoruba people of South Western Nigeria which is still popular in contemporary times. The authors showed that, just like the normal computer binary codes, Ifa Divination codes may be conveniently as a discrete structure. Thus, new characteristics of the Ifa Divination codes were deduced. In furtherance to the above, Oluwade (2019) remarked that there is an appearance of similarity pattern in a major device used for practicing African Traditional Religion (Ifa divination), Christianity (specifically, Catholicism) and Islam. This is a bead-like device which is respectively known as divining chain (whose local name is opele), rosary and tesbih. Thus, results earlier arrived at on Ifa Divination may, to some extent, be extended to the analysis of the practice of Christianity and Islam, and indeed other mythologies which use beads as a medium of metaphysical communication. In particular, a theory of similarity pattern in Abstract Algebra (otherwise known as theory of equivalence relations), is an important tool being used by the present author in his research on MC.
In Oluwade (2011), the authors presented a general model of all existing human languages (from the beginning of human existence in the universe) as computer coded character sets, particularly as subsets of Unicode. The model is a framework for designing a new coded character set which is an extension of the Unicode. Oluwade (2020) presents a critical review of a book (McKee, 2004) written by a professional physicist on fundamental science discoveries with predictions for the future. The book is on progress made in modern physics (quantum mechanics, relativity etc) in relation to other areas of science such as neuroscience, nanoscience and computer science (with respect to quantum computers). Among others, the book author argued for a new science of consciousness which will incorporate not only the conventional natural sciences, but also metaphysics, including proof of a 'Supreme Observer'. The book also relates to discoveries and projections in PC. In a recent paper, Oluwade et. al. (2020) modeled human languages as computer coded character sets. These are sets through which data are processed as sequences of 0's and 1's in the computer (Oluwade, 2004). As a preliminary effort in the paper, the authors presented some mathematical proofs which tend to trace or deduce the (primary) language spoken by the first set of humans on earth. This is done via the family of languages which the primary language belongs to.
In conclusion, this presentation highlights the author's ongoing research in presenting a holistic description of the universe by capturing all known and possible phenomena which are physical and metaphysical. In essence, the research is an effort to blend mythological cosmology (MC) with physical cosmology (PC), since in the view of the author, both are complementary and not supplementary. The modus operandi is the deployment of non-trivial mathematical principles in establishing proofs for MC and justifying a link between the two categories of cosmology. The author is encouraged in his research by noting the fact that as recent as about five decades ago, PC was regarded as a dead end field of study. The field has however recorded monumental success in the present times. Apart from mathematics, physics, computer science and philosophy, other knowledge areas whose results are being deployed in the author's research include parapsychology, theology, philosophy, paleontology and archaeology (Onabamiro, 1980). Ultimately, it is expected that the veracity of metaphysical phenomena will be less controversial and substantially validated and accepted in mainstream science, in line with the wish of notable scientists like James (1986).
Keywords: Mythological cosmology, Physical cosmology, Scientific proofs, Metaphysics, Mathematical model
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Summary

This presentation showcases the author's research on mythological cosmology. There is no doubt that physical cosmology is virtually seen as synonymous to cosmology in popular science. In this paper, the author argues that physical cosmology is incomplete in describing all tangible phenomena in our universe. His approach is to establish valid scientific proofs for metaphysical phenomena with the aid of mathematical model. Essentially, metaphysical phenomena are translated into mathematical relationships which are then proved using standard methods of proof in mathematics. This research methodology is also supported by scientific/thought experiments, and with results from other fields of study including parapsychology, paleontology, archeology, theology and philosophy.

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Session Classification: Repository - AfLS Poster / Slides - Click on the Blue area - Click on the "View Contribution List" - visit the contribution by clicking on it, you will be taken to the Abstract ... on the right is the Poster / Slides, so you can click on them

Track Classification: AfLS2020 track