



Unified cosmology as the force component theories

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Abstract

Albert Einstein had this distinctive dream to Unify all the fundamental forces of nature since he theorized the General Theory of Relativity. At that time, there were only two forces known i.e. Gravity and Electromagnetism, henceforth Einstein developed his idea of “Unified Field Theory”. Now, there are four fundamental forces which are Strong & Weak Nuclear Forces in addition to the previous. So this “Unified Cosmology as the Force Component Theories” is a brief theorization of Einstein’s vision of that unification whose full version i.e. “Unified Cosmology” got its Intellectual Property approval back in February-2021 by the WIPO (UNO) via DIPPP, Govt. Of India. Here is an extracted version of that full discovery is brought up.

Keywords: einstein’s general theory of relativity, quantum physics, string theory, unified field theory, fundamental forces of nature, standard model of particle physics

Introduction

The virtue of Space-time has the intrinsic property that has been proposed with Einstein’s legendary contribution of the General Theory of Relativity, which mathematically sums up with the given ultimate touch to his field equations as below formulae

$$R_{\mu\nu} - \frac{1}{2} R g_{\mu\nu} + \Lambda g_{\mu\nu} = \kappa T_{\mu\nu}$$

Where;

1. $R_{\mu\nu}$: Ricci Tensor
2. R : Ricci Scalar
3. $g_{\mu\nu}$: Metric Tensor
4. Λ : Cosmological Constant
5. $T_{\mu\nu}$: Stress Energy Tensor
6. κ : Einstein’s Gravitational Constant i.e. $(\kappa = \frac{8\pi G}{c^4})$; c is the speed of light in vacuum and G is the Newton’s Gravitational Constant.

The Mathematics of General Relativity says as quoted by Physicist John A. Wheeler that “Space-time tells matter how to move; matter tells space-time how to curve”. It explicitly acts with the continuous space-time fabric whereas Quantum Physics on the other hand give rise to the idea of discrete space-time. From quite a long time, it has been tried to unify both quantum physics and general relativity. Although, unifying quantum physics and general relativity may not necessarily being the ultimate explanation to the quest of the Unified Field Theory because such attempts as trails has already been proposed under the account of different ideas such as String Theory or Loop Quantum Gravity in some

sense, although they too haven’t attained with absolute precision. The reason behind the only unification of quantum physics and general relativity isn’t the Unified Field Theory because they both differ in defining the nature of space-time fabric and thus, general relativity and quantum physics altogether may have the capability to determine the distinctive reality of space-time more precisely but having a lack of unifying all the fundamental forces of the nature which may be even more than four that are currently present and can give rise to much advanced version to the Standard Model of Particle Physics similarly like the Higgs’ boson made with the presence of scalar field and completed multiple distinctive trajectories to that.

String Theory suggests the most fundamental explanations towards the most minuscule level but there are still a few questions some have been asked and some have not been even Thought ever. One of such questions is “How the strings evolved up to a certain movement that give rise to all the particles responsible for the entire richness and elegance seen in the nature?” If this aspect is answered then we will definitely be there to the completion of the Legend Einstein’s dream of Unification of all the fundamental forces of the nature and we will be only one step ahead towards the “Theory of Everything”. Hence; the answers to this question is theorized below :-

“There is the quantization of void means quantization of the time at zero extremity in terms of space that given rise to a static string-like structure with a loop and the interaction in between the loop raised the movement of the string which further determines the entire projection onto the fabric of space-time in unison, due to the throughout propagation of massive distributive form of energy to that”.

Here we have the loop only due to the distinction of mathematics as it makes the mathematical aspects to be absolutely satisfactory in terms of the geometry of space-time and so on to the very beginning of the Universe also may help in the inflationary cosmology because the inflationary epoch makes much sense due to everything has the natural unified intensity in that part considering the dynamical form too because everything gets in collective to distributive form as universe began to expand and can be visualized into the form of entropy also. Now; if observed deeply, then such composition of String is compiled with all the fundamental forces of the nature so if this mechanism can be determined

then the corresponding endeavors will eventually be defined the Einstein’s dream of the Unified Field Theory. With that, the format of the entire development of all times into the account of the Understanding of Universe can be extracted. The mathematics to the above statement is quite a long framework in itself, but on a very primordial stage, it also give rise to a possibility of extra-forces and thus, the mathematical framework that deals with “Only & Only” force components is give as below :-

“Dev Arastu’s Force Component Theory”

$$\sum_{i \geq j} \sum_{\alpha} \left\{ \int \frac{-\sqrt{|g_{ij}|} (ds^2 / \exp d\tau^2)}{E^{ijkl} \partial_{\alpha} \Gamma^{i\alpha}_{kj}} \right\} \det(dim|\mathcal{M}) = \sum_{i \geq j} \int_{\mathcal{M}} \int_{|\psi\rangle} d^2 t \exp \left(\frac{(\mathcal{F}^{\alpha\beta\gamma}_{\gamma_{ij}})}{(\alpha_c \wedge \beta_c)} \right)$$

Where;

1. $f(t)$ or t : Function of Time
2. g_{ij} : Metric Tensor
3. $\alpha, \beta, \gamma, i, j, k, l$: All set of permutations i.e., discrete indices components compiled as orientation form in the geometry of space-time (e.g. in General Relativity or Einstein- Hilbert Action or Gauge transformations).
4. ds^2 : General Vacuum solution in Nordström’s Theory of Gravitation.
5. $d\tau^2$: Peres Metric.
6. $dim|\mathcal{M}\rangle$: Generalized dimensional array as transitive relation over \mathcal{M} .
7. E^{ijkl} : Contravariant Levi-Civita Tensor w.r.t. Minkowski Space.
8. $(\alpha_c \wedge \beta_c)$: Component peculiarities of $\alpha \wedge \beta$.

9. $(\alpha \wedge \beta)$: Multi-linear vector space generalizes dual forms of relative orientations i.e. also exhibits/give rise to isomorphism.
10. $|\psi\rangle$: Instantaneous effect transmission.
11. γ_{ij} : γ As discrete w.r.t. i & j .
12. \mathcal{F}^{\dots} : Interactive movement (as certain force) over the attributed respective indices.

Also, the Alternative form which often referred into the account of Quantum Field Theory somewhat like the Perturbative form of the above mathematical equation is given below as

“Dev Arastu’s Alter-Force Component Theory”

$$\sum_{i \geq j} \sum_{\alpha} \left\{ \frac{(- ds^2 / \epsilon_{ijkl} (\exp d\tau^2)) \phi_{ij}(t)}{\partial_{\alpha ij} E^{ijkl} \Gamma^{i\alpha}_{kj} |\psi\rangle} \right\} = \sum_{\alpha, \beta} \sum_{i \geq j} \left(\frac{dim|\mathcal{M}\rangle \sqrt{|g_{ij}|} \mathcal{F}^{\alpha\beta\gamma}_{\gamma_o(\gamma_{ij})} \phi_o(t)}{|\psi\rangle \sqrt{-g} (\alpha_c \wedge \beta_c)} \right)$$

Where;

13. $\phi_{ij}(t)$: Compilation with indices of all other properties which have been diluted to the mathematics in Alteration of Field Equations.
14. $\phi_o(t)$: Same as $\phi_{ij}(t)$ where indices tend to zero.
15. $\sqrt{-g}$: Metric Tensor.
16. ϵ_{ijkl} : Invariant transformation of E^{ijkl} .
17. ∂_{\dots} : Einstein’s Notation.
18. Γ^i_{kj} (& other symbols like this): Christoffel symbols of second kind.

Note :- Here, in these papers; merely some of the fundamental abstracts or a mathematical framework has been shown with a brief introduction because in an entire outlook; “Unified Cosmology” is quite a long framework which is in the original papers that has been approved/registered as the Intellectual Property in the WIPO (UNO) via DIPP (Govt. of India).

Conclusion

On the basis of the above framework, we get on some of very fundamental remarks on our understanding to the Universe at deepest nature of reality and make certain primordial predictions e.g. some are like as the String Theory suggests the idea of extra-dimensions, similarly “Unified Cosmology as the Force Component Theories” give rise to multiple possibilities like of extra-force (s) i.e. beyond four analogous to the String Theory. It also devise the idea of supersymmetry as one of the primitive case to the Unification of all the fundamental forces of nature and henceforth, it provides the first step to the Unified Field Theory as on one of the parts of “Unified Cosmology” that is a new kind of Physics takes everything into an identical account and goes beyond or stretches to legendary realms like the Einstein’s General Theory of Relativity, Standard Model of Particle Physics (due

to interactive analytics of minuscule particles like quarks & so on) etc. Many such predictions can be made even out of such a brief introduction of the “Unified Cosmology” which ultimately may take us up to the doorway to the Theory of Everything.

References

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