

Theory of Everything by Illusion 2.0

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Abstract

Theory of Everything is The Holy Grail in physics. Physicists and like all over the world have searched the theory for a very long time. Modern day technological advances are finally opening the vast universe in all scales for curious human beings to explore. What we have accomplished is two theoretical platforms, relativity theories and quantum mechanics which are usable in their own domains. Obviously we have done good but we are still missing the theory. Due to all unsuccessful searches for the theory some people have suggested that there won't be such a theory.

Theory of Everything by Illusion 2.0 is based on the good ideas in previous Theory of Everything by Illusion. In an addition, few new ideas have emerged and at the same time few old, not so good, ideas have vanished as well.

Keywords: Theory of Everything, Unification

Contents

Theory of Everything by illusion	3
Basic Properties	3
Time	3
Size	3
Velocity	3
Mass	3
Momentum	3
Force Transfer Ether	3
Elementary Particle	4
FTEP Redistribution	4
FTEP Blocking	4
Drag	4
Conflict With Einstein's Relativity Theories	4
Energy	5
Particle Interactions	5
Force	5
The Mechanism	5

List of Figures

Theory of Everything by illusion Momentum

Theory of Everything by Illusion (TOEBI) demonstrates that gravitational, strong, weak and electromagnetic interactions can be described by the same artifacts and mechanisms.

Postulate 1. *Our universe consists of very tiny spiked spherical objects called Force Transfer Ether Particles (FTEPs).*

Basic Properties

Time

One of the most fundamental concepts in physics is time. In later parts of this book, we'll realize that time is actually an emergent phenomenon. But for now we are happy about the contemporary definition of it which also nails down the definition of one meter.

Size

Based on TOEBI hypothesis we know that Force Transfer Ether Particles (FTEPs) are spherical objects, hence we define

Definition 1. *FTEP radius is r_0 meters (excluding spikes).*

Hence one FTEP occupies volume

$$V_0 = \frac{4}{3}\pi r_0^3.$$

If two FTEPs are put together, they would occupy a volume twice that size and so on. At this point we don't have any idea about the value of r_0 other than it's way smaller than i.e. the size of proton's charge radius.

Velocity

Definition 2. *Single FTEP can have a velocity \vec{v} .*

In truly empty (even other FTEPs are absent) space there is nothing which would collide, hence interact, with a single FTEP. If a single FTEP is moving into some direction it would continue doing so infinitely.

Mass

Because FTEPs must be the ingredient of all mass we define

Definition 3. *FTEP mass as m_0 kg.*

Definition 4. *FTEP momentum $\vec{p} = m_0\vec{v}$.*

Postulate 2. *FTEP momentum is conserved quantity.*

Force Transfer Ether

Force Transfer Ether (FTE), the media where every interaction occurs, consists of FTEPs.

Definition 5. *FTE density*

$$n = \frac{\text{Number of FTEPs}}{\text{Volume}}$$

What can we say about FTE density? Is it the same through out our universe or does it vary from one location to another? It surely varies, just by putting additional FTEPs into a volume its density increases. How can we do that? We need a source of the additional FTEPs.

One such source could be a flux of FTEPs. If targeted at a specific volume it would increase the number of FTEPs in that volume. Sounds plausible, but what would generate such a flux of FTEPs? At least imaginary spherical object made of FTEPs moving inside FTE would generate FTEP flux. Faster the object moves faster those deflected FTEPs would move, but more importantly those displaced FTEPs would increase our FTE density, at least for momentarily.

Another plausible scenario could be a spinning spherical object, or a system of FTEPs which appears to behave as one, which would gain its spinning from incoming FTEP vortex-like fluxes through its spinning axis poles. That kind of configuration would generate also the outgoing FTEP flux due to the conservation of momentum. Later scenario would also provide us more manageable tool for increasing FTE density at will. FTE density gradient provides us also a vector field.

FTE density differences play the major role when we explain the underlying mechanism for the relativity theories. Also, lower than required FTE density is capable of explaining weak interaction all the way down to exploding stars after ejected out of their host galaxies. In some extreme cases one can even speculate that detected gamma ray burst is triggered by too low FTE density, circumstantial or intentional. Artificial FTE density reduction might offer us the way of producing usable energy form i.e. for deep space journeys. More about these topics in their relevant sections.

Definition 6. *FTEP flux is a flow of FTEPs through an area per second.*

Elementary Particle

What kind of an entity mainstream elementary particle could be in TOEBI? Our building blocks are very limited, we only have FTEPs. Let's start with an idea that we have a system of two contacting FTEP vortices. Such a system would redistribute incoming vortex FTEPs and the volume between the contacting vortices would function also as a blockage for all other incoming FTEPs.

Definition 7. *TOEBI particle, particle for short, consists of two contacting FTEP vortices having the opposite helicities.*

Definition 8. *Particle core is the volume in which the FTEP density has its maximal value.*

In practice, particle core functions as the boundary for the FTEP vortices.

FTEP Redistribution

Definition 9. *FTEP flux received by particle via its FTEP vortices is called particle's input FTEP flux I .*

Let's say A denotes a FTEP, then

Definition 10. *$I(A)$ means $A \in I$.*

Definition 11. *FTEP flux outwards of particle is called particle's output FTEP flux O .*

Definition 12. *$O(A)$ means $A \in O$.*

Postulate 3. *FTEPs acquire the speed c near particle core.*

Trivially, the changes in I are reflected on O at the speed of c , at equilibrium $I = O$.

Definition 13. *FTEP A gets redistributed near particle core at the moment when $A \notin I \cup O$.*

Definition 14. *Particle mass m is the combined mass of the FTEPs getting redistributed near particle core at any given moment.*

Because FTEPs acquire the speed c near particle core we can define that

Definition 15. *Particle's FTEP redistribution rate is c .*

FTEP Blocking

Definition 16. *Particle core's FTEP blocking surface area is called FTEP blocking cross section.*

FTEP blocking cross section has a significant role in particle interactions, it functions as the stopping wall for the FTEPs received i.e. from other particles. Stopped or deflected FTEPs deliver FTEP momentum onto the receiving particle, i.e. when two *free* electrons interact it all comes down to the FTEP momentum transfer between them.

Drag

Because particles exist inside FTE they should experience resistance from the surrounding FTE in case we decided to move them. Moving particle pushes FTEPs away from its trajectory hence it experiences the drag due to the conservation of FTEP momentum.

At the same time, encountered FTEPs generate increased FTE density near particle core on the side facing its heading which means acceleration for the particle.

*** continue demonstrate the balance first (acc = drag)

Conflict With Einstein's Relativity Theories

According to special relativity speed of light is c in every reference frame. According to TOEBI that can't be always true and the claim is fairly easy to verify. Let's have the classical thought experimental train at use, but this time in actual experiment involving one way speed of light measurement.

Train is moving on a plain area, so that the movement happens all the time at the same distance from the center of Earth. Train has a light source on it and at least two photon detectors at the same distance from the light source opposite to each other (in-line with the light source).

Synchronized clocks, synchronized by a trigger event (light) from the light source at the center while the train is not moving, are attached to each detectors so that we can record the time when photons first hit them. If the train moves so that the line connecting the detectors and the light source is parallel to the train's heading then according to TOEBI there should be **different times recorded** on those clocks when light from the source has first hit the detectors. However, according to general relativity those clocks (if the train has accelerated slow enough) should have recorded a much smaller time difference.

Why TOEBI predicts different times? First of all, Earth provides the FTE for our train and other equipments and nothing can move faster than c in it. Top speed c means that the time of flight (of our

test light) to the different detectors must be different because the train is moving at the same time. Rear detector will record earlier time than the front detector. Sounds impossible? However, you can't find any mention of this experiment actually made (or equivalent) from the scientific literature.

Another wrong idea with Einstein's relativity theories is the blind usage of the equivalence principle saying that gravitational influence on a system is equivalent to the influence from an acceleration. Using gravitational time dilation equation for calculating the time difference between the two clocks in our train exercise is a wrong idea. According to TOEBI, there is no FTE based mechanism which would affect the clocks synchronisation during the acceleration which is happening perpendicular to a gravitational source. And again, no experimental proof exists for supporting the usage of the equivalence principle in our train experiment.

Energy

What is the essence of particle's energy? We have three interesting particle properties: mass, the acquired maximal FTEP speed c and the rate of FTEP redistribution, hence we define

Definition 17. Particle energy $E = mc^2$

It might sound odd to define energy instead of deriving it but eventually we'll realize that defining particle's energy makes more sense than deriving it as in the contemporary physics.

Particle Interactions

Force

Interactions between TOEBI particles happens via FTEPs. What factors are involved with these interactions? Naturally the total amount of delivered FTEP momentum per second matters. Based on particle's FTEP distribution capacity (energy) we conclude that ejected FTEP momentum per second on any plane that includes the whole spinning axis of TOEBI particle matches

$$\frac{mc^2}{\pi R_{A_c}}$$

where R_{A_c} is the radius of A_c . Hence ejected FTEP momentum per second for one TOEBI particle "side" matches

$$\frac{mc^2}{2\pi R_{A_c}}$$

On the other hand, the amount of ejected FTEPs per area in the line of initial ejection obeys, due to geometric reasons, the inverse-square law

$$\frac{1}{d^2}$$

where d is the distance from the FTEP source.

Another, receiving, TOEBI particle experiences the ejected FTEP particles via its cross section A_c towards the FTEP source particle, hence

Definition 18. The overall FTEP momentum delivery rate (**Force**) between TOEBI particles is

$$F = \frac{mc^2}{2\pi R_{A_c}} \frac{1}{d^2} \pi R_{A_c}^2 = \frac{mc^2 R_{A_c}}{2d^2}$$

The reason why we have chosen symbol F for the overall FTEP momentum delivery rate comes from the fact that the equation above gives us the units as

$$\frac{\text{kg}\cdot\text{m}}{\text{s}^2} = \text{N}$$

***angle between spinning axes is essential (add it)

Can we calculate or otherwise deduce the value for R_{A_c} ? At least rough value can be calculated based on Coulomb's law. Calculated value doesn't mean that we can't put particles at closer proximity, it's just the effective radius of cross section A_c in interactions between free non-relativistic TOEBI particles.

The Mechanism

continue...