

# Einstein's Equation Expanded - Space Time - Moving Photons Mass & Gravity (New viewpoints & insights into physics theories)

## ABSTRACT

(This has about 40 changes of viewpoint from "standard physics"!)</p></div>
<div><h3><<[A]>> Einstein's equation</h3></div>
<div><p>##(1) Einstein's equation is  $E = m \cdot c^2$  can be rewritten as  $m = E / (c)^2$ , where  $(c)^2 = [L \cdot L] / [t \cdot t] = ["Area of space"] / ["Area of time"]$ </p></div>
<div><p>##(2) Einstein's "space time" should be  $["Area of space"] / ["Area of time"]$  OR  $[length / time]^2$ </p></div>
<div><h3><<[B]>> The "sequence of a mass particle moving through space".</h3></div>
<div><p>##(3) The "sequence of a "stationary, energy-mass form particle" moving through space".</p></div>
<div><p>##(4) The "stationary, energy-mass form" (as a particle) transforms into a "moving, energy wave form".</p></div>
<div><p>##(5) This "moving, energy wave form" moves through a "space area"  $[l(x);l(y)]$ ; (a face of a "space cube"). It passes through along the other axis  $[l(z)]$ .</p></div>
<div><p>##(6) Immediately the energy starts moving through the "space area", this process, itself, starts moving through the "time area".</p></div>
<div><p>##(7) This "moving, energy wave form" that's moving through the "space area" then starts moving through its "time area"  $[t(x);t(y)]$ ; (a face of a "time cube"). It passes through along the other axis  $t(z)]$ . (There is currently no known detector or animal that can detect any hint of this 3 dimensional time!)</p></div>
<div><p>##(8) The "bulk" that the "stationary, energy-mass form particle" occupied, before it "disappeared down the "rabbit hole" of a "space area" & a "time area", is now a "space void". The space immediately surrounding the "space void" collapses into the void, creating a void further out, which also collapses! There ripple of collapsing space spreads out, in an ever-expanding sphere, to the edge of the universe! It collapses like toppling dominoes! The universe is like a rubber band ball, with the tension of the bands being like the inter connecting gravity holding every particle of matter to every other particle. Every pull, pulls it tighter together, but a small "push from within" easily gets "swamped" & is very local.</p></div>
<div><p>##(9) The "collapse of space" creates a small gravity void, which creates an "incoming wave", which recreates the "stationary, energy-mass form particle". The recreation of the "stationary, energy-mass form particle, creates the "bulk" that the "stationary, energy-mass form particle" needs to occupy. The sudden increase in "bulk" creates a "moving, energy wave form". This is then back to ##(4) in the cycle of an "stationary, energy-mass form particle" moving through space!</p></div>
<div><p>##(10) The collapsing space creates the gravity, which recreates the "stationary, energy-mass form particle", which expands the space, which creates a "moving, energy wave form", which "disappears down the "rabbit hole" of a "space area" & then a "time area", which restarts the cycle over again! This is how matter moves in our universe! There are no gravitons, just collapsing space, that cause "gravity"!</p></div>
<div><p>This is how gravity can cross the 3 dimensional, event horizon, barrier"!</p></div>
<div><h3><<[C]>> Further insights into "stationary, energy-mass form particle" moving through space.</h3></div>
<div><p>##(11) Four points are not obvious from the above:-</p></div>
<div><p>(1) The "moving, energy wave form" moves at the speed of light, but most "stationary, energy-mass form particles" spend very little time moving at this speed, in this form, & are spending most of their time in the "stationary, energy-mass form particle" state!</p></div>
<div><p>(2) The way a "stationary, energy-mass form particle" is moving in the universe needs to be redefined as a "ballistical, orbital, inertial trajectory" (boit). The time spent travelling at the velocity of light is almost insignificant for most "stationary, energy-mass form particles"!</p></div>
<div><p>##(12) An example of a "ballistical, orbital, inertial trajectory" (boit) is a 1kg bag of sugar at a certain altitude, spinning around at a certain latitude around the Earth, spinning around the Sun, spinning around the Milky Way, moving through a group of galaxies. Every "stationary, energy-mass form particle" in the universe is moving every other particle in the universe from a straight line!</p></div>

(3) Inertia is also redefined as having "2 levels" one: resisting an increase in velocity; two: resisting a decrease in velocity (This is from another theory of mine.)

### <<[D]>> Understanding Gravity

##(13) (4) There are two processes that are normally consolidated into the "standard view of gravity". This separates them into two DIFFERENT forms

(i) The mix of potential energy & gravity that keeps planets & stars orbiting at the "right distance" from the larger energy-mass!

(ii) The "orbiting force", which moves heavenly bodies around their orbits!

##(14) The combination of how matter moves in our universe, as listed above and the "ballistical, orbital, inertial trajectory" combines to create the "orbiting force", which moves planets etc. around their orbits.

##(15) {A} If we start with the "stationary, energy-mass form particle", that does not have a continuous existence (as postulated above) we would have, for it a "previous position" & "next position". The relative locations of these two positions, along its direction of travel, would be "strongly determined" by its "ballistical, orbital, inertial trajectory" and when there is transitions from "moving, energy wave form" to "stationary, energy-mass form particle"! The "stationary, energy-mass form" is the platform from which the "moving, energy wave form" "pushes off" from! The "ballistical orbital, inertial trajectory" has a very big influence how "stationary, energy-mass form particles" moves.

{B} It's not "stationary, energy-mass form particles", but MOVING "stationary, energy-mass form particles", that creates gravity, by "collapsing the space" "behind them"!

{C} The velocity of the "stationary, energy-mass form particle" does not "matter" :)

[Einstein's "Mass moves space & space moves mass!" is very vague & woolly!]

### <<[E]>> Measurement

##(16) There are two types of measurement:-

Absolute (mass; charge; temperature) & Relative (time; length)

##(17) It is assumed that these differences are at the fundamental nature of the universe! Elementary particles seem to have absolute properties! So, energy & angular momentum should perhaps be reclassified as absolute values as well. With all matter in the universe having angular momentum, the conclusion is that the universe has angular momentum, so, the universe must be spinning!

### <<[F]>> The "sequence of photons moving through space".

##(18) If we look at the Schroedinger's equation, in relation to "absolute values we get a surprise: The angular momentum of a photon is inversely proportional to its wavelength, or proportional to its frequency. T

Also, the angular momentum of a photon is proportional to its energy.

Schroedinger's equation is an "absolute equation", with "absolute values" on both sides, There is a "stationary, energy-mass form, side" and a "moving, energy wave form side" to this equation. They are "swappable"; interchangeable.

For photons, neutrons & other fundamental ("stationary, energy-mass form particles"), it is envisioned that these swaps between the "stationary, energy-mass form particle" and the "moving, energy wave form" are at a frequency between a photon's frequency & Plank's frequency!

##(19) The "sequence of a photon moving through space is slightly different & simpler than for a "stationary, energy-mass form particle".

##(20) For a photon:- A "stationary, energy-mass form particle" has a magnetic field that is spinning around its direction of travel.

##(21) This transforms into a "moving, energy wave form", moving at the velocity of light, that has an electric field around it.

##(22) The spinning magnetic field, creates a moving electric field & a moving electric field creates a magnetic field. This sequentially swapping of fields is what creates a "transmission medium" for photons to move through space!

##(23) The spinning magnetic field must be what creates the "temporary" "stationary, energy-mass form particle" for the "moving, energy wave form" to "push against", to "move away from it". The moving electric field then "pulls the 'magnet' towards itself"!

##(24) What is not obvious from the above, is that the "moving, energy wave form" moves at the

speed of light. Most photons spend most of their time moving at this speed, & are spending very little time in the "stationary, energy-mass form particle"!

##(25) If we start with the "stationary, energy-mass form" of a photon (or an elementary "stationary, energy-mass form particle"), that does not have a continuous existence (as postulated above) we would have, for it a "previous position" & a "next position". The relative locations of these two positions, along its direction of travel, would be "determined" by its direction and when there is transitions from "moving, energy wave form" to "stationary, energy-mass form particle"! The "stationary, energy-mass form particle" is the platform from which the "moving, energy wave form" "pushes off" from!

### <<[G]>> Predestination

##(26) For a "stationary, energy-mass form" (either as a photon or as a "stationary, energy-mass form particle") the "previous position" & "next position" sequence, the "previous position" "needs to know" where the "next position" is in space & time! This really implies (especially for "stationary, energy-mass form particles") that predestination & inertia is strongly interlinked and determines the future & that the "future" is determined by the "past" (when these two are very close together!) Predestination would seem to be built into the universe!

##(27) However, no-one would suggest that the randomness of a water molecule adding to a snowflake was predestined, "meant to be", or "God's will"! The choice is yours, or not! :)

### <<[H]>> The universe that merged into "our own universe"

##(28) An easy explanation for:-

(i) the origin of two different "measuring systems"; "absolute measurements" & "relative measurements" &

(ii) the origin of the energy - mass - gravity, when it "can't be created or destroyed" in our universe is that both these "puzzles" have a common solution;

##(29) our "original universe" had only "relative properties" of time and length i. e. space. Both of these are really "meaningless concepts" when there is only time and space present! There is "nothing as a "reference measurement" for anything in the universe"! Nothing changes! This universe is both infinite and not!

##(30) & a "nearby universe" had all "absolute properties" (or some of its space & time properties could have "cancelled out" some of our space & time properties {from 3 dimensions of time?}).

##(31) The whole universe of the "nearby universe" collapsed into one "universal black hole". This collapse was "mirrored" by all the energy - mass - gravity from its collapse transporting into our universe, via the "white hole" of our "big bang"!

##(32) The "white hole", "big bang" creation of our universe corresponds to "known observations":-

(i) Sudden inflation.

(ii) Energy - mass - gravity without breaking the "can't be created or destroyed" "law".

(iii) Two different "measuring systems".

(iv) High energy density start to "big bang".

(v) The even energy density from the very high energy & pressure from the collapsing "nearby universe".

(vi) There would be "slight cooling" during the transfer of all the energy - mass - gravity into our galaxy, with the final bit showing the most effect. A comparison could be made with a hose attached to a water butt. The flow has big changes at the beginning & end, with quite a gradual decrease for most of the flow. A "wormhole" between the universes would be like the hosepipe. The cooling of the flow would show up as the "older parts" of our universe being hotter. The "residual heat" of our universe, as shown up by measurement of the Cosmic Microwave Background Radiation (CMBR) could be used as a proxy for the "initial heat of the energy - mass - gravity" flowing from the "white hole" / "big bang". This shows up as "hotter islands" or freckles, which would be older, on the newer background which is colder!

(vii) [not "observed"] The "nearby universe" could have had no constraints on matter "can't be created or destroyed"!

(viii) [not "observed"] Before the universe collision, the "timescale" of our "space & time only" universe is undefineable! "What happened before that?" is meaningless! It is like putting an ant on a ball, in a box, in intergalactic space, and asking it the question; "Which way is up?" and waiting for the reply in

English!

### <<[I]>> The "unneeded", "esoteric ideas" of quantum theory

##(33) This "paper" of mine uses an "Occam's razor approach", that there is no real need for some of the more "esoteric ideas" of quantum theories.

No need for:-

##(34) the "wave - particle duality" because the waves & particles occur sequentially!

##(35) the "uncertainty principal of the simultaneous measurement of position & velocity (momentum)" because they never occur simultaneously. [in moving photons or moving "stationary, energy-mass form particles"!] They occur in sequence. Position & velocity can be likened to a caterpillar & a butterfly; never together, simultaneously, in the same insect!

##(36) "Schroedinger's cat in a box experiment", because there is no "duality" in either [position and momentum] or [energy and time]!

##(37) a "collapse of the wave function" because there is no need for a "choice between 2 simultaneous options" of "duality" in either ##[34] or ##[35]!

##(38) "Spooky, at a distance, interaction!", because, when an electron & a positron are created they will have opposite charges & opposite spins & opposite polarisations & move off in opposite directions from the start, as will photons. The "entanglement" is built in from the very start. The spin of one photon will ALWAYS be detected as the opposite of its "entangled pair", without "Spooky, at a distance, interaction!" that is faster than light! Time delay by gravitational bending or passing through "denser medium" or travelling along a longer path, will change the "synchronicity" of the entanglement!. What the detector detects determines what is found!

### THE REPORT:-

#### CONTENTS -Sections

<<[A]>> Einstein's equation

<<[B]>> The "sequence of a "stationary, energy-mass form particle" moving through space".

<<[C]>> Further insights into "stationary, energy-mass form particle" moving through space.  
Ballistical, Orbital, Inertial Trajectory (B.O.I.T.)

<<[D]>> Understanding Gravity

<<[E]>> Measurement

<<[F]>> The "sequence of photons moving through space".

<<[G]>> Predestination

<<[H]>> The universe that merged into "our own universe"

<<[I]>> The "unneeded", "esoteric ideas" of quantum theory

<<[J]>> Additional thoughts on:-

{A} Newton's Laws

{B} Gravity & orbits

{C} "Observer measurement"

{D} Young's slit experiment

{E} Predestination

### THE REPORT:-

<<[A]>> Einstein's equation

(What Einstein didn't think of.)

Einstein's famous equation is  $E = m * c^2$

where, E is energy; m is mass; c is the velocity of electro-magnetic radiation.

$c^2$  is (velocity of electro-magnetic radiation) \* (velocity of electro-magnetic radiation)

This can be rewritten as :-

$$m = E / [c^2] = E / [(l^*) / (t^*)]$$

$$m = (t^*) / E\# \quad [ \text{Where } E\# = [(l^*) / E ]$$

$$1 / m = E\# / (t^*) \quad [ \text{Where } E\# = [(l^*) / E ]$$

where, l is length; t is time

$$[(l^2) / (t^2)] = ["\text{area of space}"] / ["\text{area of time}"]$$

So, the space time of Einstein's famous equation should be considered as

$$["\text{area of space}"] / ["\text{area of time}"] \quad \text{OR} \quad (\text{length} / \text{time})^2$$

The "new physics":-

### <<[B]>> The "sequence of a “stationary, energy-mass form particle” moving through space”.

Assuming that photons (& elementary “stationary, energy-mass form particles”) have energy-mass & wave properties, but that these two properties occur sequentially, not simultaneously! (This is part of another theory of mine.)

There is a chain of events that happens when an “stationary, energy-mass form particle” (or photon {slightly different}) moves from the past into the future.

[1] A "stationary, energy-mass form particle" transforms into its "moving, energy wave form".

[2]  $E / [(l^2)]$ ; The "moving, energy wave form" / ["area of space"] could be:-

(a) the energy spread over an area OR

(b) the energy passing through an "area of space"  $[l(x) \cdot l(y)]$ , along an axis  $[l(z)]$ , along an axis

$[l(z)]$  "perpendicular to that 'area of space' "!

the second option best fits the chain. This transit could be viewed as "the unavoidable inertia of space"!

[3] Immediately after the above, transit through the "area of space", begins, the following starts to occur. It cannot start simultaneously, because the start of the transit of the "area of space" and the transit of the "area of time" are mutually exclusive for a simultaneous start time.

For:-  $m = (t^2) / E\#$  [ Where  $E\# = [(l^2) / E]$  ]

$$1 / m = E\# / (t^2) \quad [\text{Where } E\# = [(l^2) / E] ]$$

$E\# / (t^2)$  OR  $\{ \{ E / [(l^2)] \} \} / (t^2)$ ; The  $\{ \{ \text{"moving, energy wave form"} / ["\text{area of space}"] \} \} / ["\text{area of time}"]$  could be:-

(a) the  $\{ \{ \text{"moving, energy wave form"} / ["\text{area of space}"] \} \}$  spread over an area OR

(b) the  $\{ \{ \text{"moving, energy wave form"} / ["\text{area of space}"] \} \}$  passing through an "area of time"

$[t(x) \cdot t(y)]$ , along an axis  $[t(z)]$ , "perpendicular to that 'area of time' "!

the second option best fits the chain. This transit could be viewed as "the unavoidable inertia of time"!

The ["moving, energy wave form" transiting through the "space area"] is then transiting through the "time area"]

The 'mass goes through' the “space cube. The ' “inverse or reciprocal mass” or (the "moving, energy wave form" passing through the "area of space") goes through' the “time cube”. There is an inbuilt “balance scales” between the mass and the “inverse or reciprocal mass”.

[4] The “stationary, energy-mass form particle” that was "in its past" has been transformed into a “moving, energy wave form” & then "teleported” via its "moving, energy wave form" travelling through its "space area portal" (the normal passage of a photon or “stationary, energy-mass form particle” passing through the universe), then travelling through its "time area portal", "into its future". The "stationary, energy-mass form particle” in the “future" then immediately changes into a “stationary, energy-mass form particle” in the “past" and repeats the chain ad infinitum! The "moving, energy wave form" is always "moving into the future", whilst the "stationary, energy-mass form particles" are always "moving into the past"!

[5] The “space” occupied by the “stationary, energy-mass form” particle that “disappears” down the “rabbit hole” of “space area” & “time area” becomes a “space void” & “nature abhors a vacuum”, so the space immediately surrounding the void collapses into it. This then creates a void, very slightly further out, which is filled by collapsing space slightly further out again. The domino collapse of space rippling out from around the “stationary, energy-mass form particle”, transforms into the “moving, energy wave form” & then passing through its “space & time areas”) moves outward as an ever-expanding gravity, ripple sphere, passing through the universe, causes gravity. Simply, gravity is collapsing space, “pulling the universe together”!

[6] The “moving, energy wave form”, {moving through “space area” & “time area”} & moving gravity

recreates the “stationary, energy-mass form particle”. (The gravity – energy - mass distortion of time.) [7] The “expansion of space”, from the creation of the “bulk” of the “stationary, energy-mass form particle” creates a “moving, energy wave form”.

"area of space" -  $l(x)$  by  $l(y)$  & transit direction  $l(z)$ . The transit direction is its course through the cosmos of course!

"area of time" -  $t(x)$  by  $t(y)$  & transit direction  $t(z)$ . The transit direction is from the past into the future of course!

**This is how matter moves “from the past into the future”!**

**<<[C]>> Further insights into “stationary, energy-mass form particle” moving through space.**

Four points are not obvious from the above:-

(1) The "moving, energy wave form" moves at the speed of light, but most “stationary, energy-mass form particles” spend very little time moving at this speed, & are spending most of their time in the "stationary, energy-mass form particle"!

(2) The way an “stationary, energy-mass form particle” is moving in the universe needs to be redefined as a "ballistical, orbital inertial trajectory" (boit).

An example of a "ballistical, orbital, inertial trajectory" (boit) is a 1kg bag of sugar at a certain altitude, spinning around at a certain latitude around the Earth, spinning around the Sun, spinning around the Milky Way, moving through a group of galaxies. Every “stationary, energy-mass form particle” in the universe is moving every other particle in the universe from a straight line!

(3) Inertia is redefined as having "2 levels" one: resisting an increase in velocity; two: resisting a decrease in velocity (This is from another theory of mine.)

(4) Ballistical, Orbital, Inertial Trajectory (B.O.I.T.)

This theory has a radical change of viewpoint on inertia.

INERTIA is the tendency for an “stationary, energy-mass form particle” to continue moving at the same velocity and in the same direction, or stay at rest.

A cannonball moves in a ballistic trajectory, with constantly changing velocity & direction.

This change in viewpoint merges the two concepts.

One logical train of thought led to the conclusion that inertia should be redefined as having two levels:-

1. The resistance to starting motion or increasing velocity.
2. The resistance to stopping motion or decreasing velocity.

In effect, positive and negative inertia.

The other logical train of thought, expanded here, is the (redefined) different view of the “direction of inertia”.

Everyone looking at a 1kg bag of sugar on a worktop, would, say (if asked), that gravity is trying to pull it towards the centre of the Earth.

Most would also say that the “inertia direction” was in the same direction.

In reality, the bag (& its inertia) is moving in a direction “no-one really considers”. It is spinning around on the surface of the Earth at its altitude and latitude and also orbiting the Sun & the centre of the Milky Way!

My designation for this combined movements is its “Ballistical, Orbital, Inertial Trajectory” (B.O.I.T.). Its path in the Universe is influenced by every “stationary, energy-mass form particle” in the Universe! This makes “accurate” calculations of the value more complicated than calculating values for the 3 body gravity problem!

The curved movement of “stationary, energy-mass form particles”, “under the influence of gravity” e. g. cannonballs and planets, could have been added, as a description of the “Ballistical Orbital, Inertial Trajectory” of “stationary, energy-mass form particles”, to Newtons Laws of Motion.

**<<[D]>> Understanding Gravity**

## MODELS FOR THE CONCEPT

[a] An elastic band ball is a ball made by stretching many dozens of elastic bands together to make a round ball. Every elastic band is helping to pull the ball together from all the different directions. There is a lot of interconnectedness & tension within the ball.

[b] Domino toppling is where a long line of dominoes are closely spaced together, such that one can't fall without knocking over its next nearest neighbour. Here, the concept is slightly modified. Each domino has a loose thread attaching it to the next domino. The dominoes are falling away from the standing ones, with the attached thread pulling over the next domino.

## THE LOGICAL STEPS

There are two processes that are normally consolidated into the "standard view of gravity". This separates them into two DIFFERENT forms

(i) The mix of potential energy & gravity that keeps planets & stars orbiting at the "right distance" from the larger energy-mass bodies!

(ii) The "orbiting force", which moves heavenly bodies around their orbits!

[1] If we accept the fact that all matter has extremely dense and extremely small "energy-mass spheres" as the "base units" under the "standard model of elementary particles". The "building blocks" should all behave identically. The electron neutrino might contain a few "blocks" or only a single "spherical block".

[2] The "stationary, energy-mass form particle" collapsing through the "space area" & the "time area" creates a "space void" in the "hollow". The "elastic band ball, pull, interconnectedness and tension" of "all the "stationary, energy-mass form particles" in the whole universe", means that the "stationary, energy-mass form particle" void" is almost immediately filled in by the space adjacent to it collapsing into the void. The collapse, moving the space inwards then leaves a void where it came from, so space further out collapses into it. One inward "disappearance of the bulk of the "stationary, energy-mass form particle" of an elementary particle, creates an inward "domino topple" like ripples of voids in space; all the way out to the edge of the universe! It spreads out like ripples in a pond, when a stone is thrown in, (but in 3 dimensions), getting ever weaker.

This ongoing collapse of space (space ripples, as bending & warping of space) around "elementary stationary, energy-mass form particles" is the mechanism behind gravity!

[3] So, no matter where an "stationary, energy-mass form particle" is in the universe, it is the "collapsing space" behind it, on the small scale, that creates gravity. So, when a particle has just crossed the event horizon of a galactic sized black hole, its "ripple of cascading space" flows out past the event horizon. As it is not a particle or electro-magnetic radiation, it can bypass the 3 dimensional event horizon unhindered.

[4] The "outward push" (from the "recreation" of "stationary, energy-mass form particles") is "extremely limited" (incompressibility of space!) and could be considered as "anti-gravity" (the - of - & + of gravity). Its "extremely limited" contribution to the expansion of the universe has not been considered.

[5] An "out of the box" possibility is that, as the universe is expanding, there is less pressure on the "stationary, energy-mass form particles". This could lead to more "expansion from the recreation of "stationary, energy-mass form particles". This would create more gaps around them, but weaker collapse. The weaker collapse could lead to weaker gravity with time. This would lead to faster expansion of the universe.

[6] This has implied properties for space, namely; it is very fluid & it has little compressibility. These 2 properties are beneficial for electro-magnetic transmission through space. It also implies that the size of any "space quanta" must be noticeably less than the size of the "collapse voids" of electron neutrinos!

[7] The "fluid velocity" of space is  $c$  for electro-magnetic waves. The "only conclusion / guess" is that applies to "gravity waves" as well"!

[8] It is near impossible to separate out a single quark. It would be very, very much more difficult to separate out an "energy-mass-charge 'sphere'" that must be the "common building block" of all elementary particles!

The combination of how matter moves in our universe, as listed above and the "ballistical, orbital,

inertial trajectory" combines to create the "orbiting force", which moves planets etc. around their orbits.

{A} If we start with the "stationary, energy-mass form particle, that does not have a continuous existence (as postulated above) we would have, for it a "previous position" & "next position". The relative locations of these two positions, along its direction of travel, would be "strongly determined" by its "ballistical, orbital, inertial trajectory" and when there is transitions from "moving, energy wave form" to "stationary, energy-mass form particle! The "stationary, energy-mass form" is the platform from which the "moving, energy wave form" "pushes off" from! The "ballistical orbital, inertial trajectory" has a very big influence how an "stationary, energy-mass form particle" moves.

{B} It's not the "stationary, energy-mass form particles" themselves, but the MOVING "stationary, energy-mass form particles", that creates gravity, by "collapsing the space" "behind it"!

{C} The "linear velocity" of the "stationary, energy-mass form particle" has very little influence, usually, on the gravity created by the space collapsing behind the moving mass. It is easy to understand that, at extreme velocities, a larger space void / vortex could be created. As this would create more space collapsing, it would create more "apparent mass" and a larger "moving, energy wave form", creating more "stationary, energy-mass form particle" :)

[Einstein's "Mass moves space & space moves mass!" is very vague & woolly!]

## <<[E]>> Measurement

(Absolute & Relative Measurement Leads to No Wave Particle Duality & Gives Orbital Motion)

[viXra:1910.0093 http://vixra.org/author/s\\_c\\_gaudie](https://vixra.org/author/s_c_gaudie) [Updated & corrected slightly.]

[tetrahedron\\_1\\_3\\_6@aim.com](mailto:tetrahedron_1_3_6@aim.com)

(This is included for comprehensiveness.)

## ABSTRACT

#1 Two types of measurement:- Absolute [(energy-)mass; charge; temperature] & Relative [time; length]

#2 Energy & angular momentum reclassified as absolute values!

#3 All matter must have angular momentum.

#4 The universe, itself, must be "spinning"!

#5 There is a "stationary, energy-mass form side" and a "moving, energy wave form side" to the Schroedinger equation.

#6 These swaps between the "stationary, energy-mass form particle" and the "moving, energy wave form" are at a frequency between a photon's frequency & Plank's frequency!

#7 For the photon or neutrons (as an example of an "stationary, energy-mass form particle"), when it is in the "stationary, energy-mass form" it is in a fixed, "stationary position"!

#8 For the photon or neutrons, when it is in the "moving, energy wave form" it is moving from its "previous stationary, energy-mass form" to its "next stationary, energy-mass form" at the speed of light!

#9 The difference in "apparent velocity" between a photon and a "stationary, energy-mass form particle", is that:-

{A} a photon spends very little time in the "stationary, energy-mass form" and most of its time in the moving at c "moving, energy wave form"!

{B} a stationary, energy-mass form particle" spends very little time in the "moving at c; velocity", in the "moving, energy wave form" and most of its time in the "stationary, energy-mass form"! The relative ratio of time spent in the "moving at c; velocity" in the "moving, energy wave form" particle, will determine the "apparent velocity" of the "stationary, energy-mass form particle" moving relative to its surroundings!

#10 A "moving, energy wave form" has a moving electric field.

#11 A "stationary, energy-mass form particle" has a rotating (around its direction of travel) magnetic field.

#12 The rotating magnetic field creates an electric field.

#13 The moving electric field creates a rotating magnetic field.

#14 The "swapping" of "previous stationary, energy-mass form" & its "next stationary, energy-mass form" is what moves the "stationary, energy-mass form particle / planet / sun" around in its orbit; "pushing it along in its "ballistical, orbital, inertial trajectory", not gravity!



#15 This means that the “previous stationary, energy-mass form” “needs to know” where the “next stationary, energy-mass form” is going to be & when it “needs to be there”. This means that the “future” is predetermined by the “past”!

#16 Predestination would seem to be built into the universe! (but see the end of this!)

## INTRODUCTION

There are a few changes from the “standard viewpoint of physics” in this. They are “strung together in a sequence” here. The sequence here does not mean that any one of these “parts of the sequence” cannot be fully viable on its own!

An unexpected revision of some aspects of physics, from insights into the types of measurement and the consequences of the changed viewpoint!

There are 2 types of measurement: Absolute & Relative

Absolute:- is “single measurement” for “a measurement” e. g. mass; charge; temperature

Relative:- needs a stop & start for “a measurement” e. g. time; length

It is assumed that these differences are inherently different at the fundamental level of the universe! It is further assumed that the elementary particles have all of their properties as absolute values. This would mean reclassifying energy & angular momentum as absolute values!

Angular momentum would be absolute.

Linear momentum would be relative.

It is further assumed that the matter in the universe is in the “standard absolute measurement” mode. This would mean that all matter must have angular momentum, and must, therefore be in a “ballistical, orbital, inertial trajectory”, moving relative to something. The universe, itself, must be “spinning”!

If we look at Schroedinger's equation, in relation to “absolute values” we get a surprise:

The angular momentum of a photon is inversely proportional to its wavelength, or proportional to its frequency.

The angular momentum of a photon is also proportional to its energy.

Schroedinger's equation is an “absolute equation”, with “absolute values” on both sides,

There is a “stationary, energy-mass form, side” and a “moving, energy wave form side” to this equation. They are “swappable”; interchangeable.

For photons, neutrons & other fundamental (“stationary, energy-mass form particles”), it is envisioned that these swaps between the “stationary, energy-mass form” and the “moving, energy wave form” are at a frequency between a photon's frequency & Plank's frequency!

(I shall use a neutron as an example of any fundamental particle of energy-mass particle.)

Re:- <http://vixra.org/abs/1910.0093> The above "paper" of mine (as above) does not say so explicitly, (but it probably should have!) but heavily implies, in its "Occam razor approach", that there is no real need for some of the more "esoteric ideas" of quantum theories.

[See <<[I]>> **The "unneeded", "esoteric ideas" of quantum theory** section below]

### <<[F]>> **The "sequence of photons moving through space".**

For the photon or neutrons (as an example of a energy-mass particle), when it is in the “stationary, energy-mass form” it is in a fixed, “stationary position”!

For the photon or neutrons, when it is in the “moving, energy wave form” it is moving from its previous “stationary, energy-mass form” to its “next stationary, energy-mass form” at the speed of light!

The photon moves (usually) in a straight line through the universe.

The neutrons moves in a “ballistical, orbital, inertial trajectory”, that is modified by the position and gravitational strength of every “stationary, energy-mass form” particle in the universe, as it travels through the universe!

The difference in “apparent velocity” between a photon and an energy-mass particle, is that:-

(1) a photon spends very little time in the “stationary, energy-mass form” and most of its time travelling at  $c$ , in the “moving, energy wave form”!

(2) an energy-mass particle spends very little time in the moving at  $c$ , in the “moving, energy wave

form" velocity and most of its time in the "stationary, energy-mass form"! The relative ratio of time spent in the moving at  $c$  in the "moving, energy wave form" for the energy-mass particle, will determine the "apparent velocity" of the "stationary, energy-mass form" particle relative to its surroundings!

When it comes to electro-magnetic radiation, there is an added factor to consider.

The electro-magnetic radiation, moving at  $c$  in the "moving, energy wave form" has a moving electric field.

The "stationary, energy-mass form particle" has a rotating (around its direction of travel) magnetic field

The rotating, magnetic field creates an electric field.

The moving, electric field creates a rotating magnetic field.

The "stationary, energy-mass form particle" is like a cannonball that is fired from a cannon.

The moving electric field is like the cannonball, with a long spring attached back to the cannon. When the cannonball lands, it pulls the cannon towards it, reloads the cannon and then refires! This cycle keeps repeating, whilst a photon or neutron is moving.

The magnetic field moves the electric field and the electric field moves the magnetic field. The changing fields & their interaction is what "moves along" the electromagnetic radiation. The electric field "pushes itself away" from the "stationary magnetic field". This is its transmission medium; its self-contained "ether".

The "stationary, energy-mass form particle" has a rotating magnetic field. This "magnetic field" could be much more "associated" with the "gravity field" than the "electric field"!

The "moving, energy wave form" velocity for photons & "stationary, energy-mass form particles", when "moving between the two" "stationary, energy-mass forms", would be the speed of light.

Gravity holds planets in their orbits around their suns & suns around their galaxies, but as all "energy-mass bodies" have angular momentum around their more energy-massive central body, the orbiting energy-mass's elementary particles are all swapping from "moving, energy wave form"; to "stationary, energy-mass form"; to "moving, energy wave form"; to "stationary, energy-mass form" ad infinitum. All the energy-mass particles are moving in a "ballistical, orbital, inertial trajectory", via the wave-mass sequences, in their orbits.

(Gravity keeps the planets / suns "at the correct distance"!)(The interplay between potential energy & gravitational energy is what happens in elliptical orbits.)

The sequence is, in effect, "I am here as an "stationary, energy-mass form". I, next, need to get to the "next stationary, "stationary, energy-mass form" form position" there, at a certain time! I change into the "moving, energy wave form" to move between the two "stationary, energy-mass form particle" positions. There is, in effect, ongoing "teleportation", of each individual elementary "stationary, energy-mass form particle", between the "previous stationary, energy-mass form position" & its "next stationary, energy-mass form position". This process is what moves the "stationary, energy-mass form particle / planet / sun" around in its orbit; "pushing it along" in its "ballistical, orbital, inertial trajectory", not gravity! There is, an inertia effect.

### <<[G]>> Predestination

This means that the "previous stationary, energy-mass form position" "needs to know" where the "next stationary, energy-mass form position" is going to be & when it needs to be there. This means that the "future" is predetermined by the "past"! Albert Einstein might have described this as "Spooky, at a distance in time, interaction!"

Energy-mass particles & photons needs the "past-future interface & energy-mass-wave interface" to exist! This is how the "stationary, energy-mass form particle" & photons move through space & time. The "needing to know the future position & time" of the "next energy-mass particle position" would seem to indicate predestination is closely tied to inertia!

From this point of view, in the "Schroedinger's cat experiment" the cat is not "alive & dead simultaneously"! There is uncertainty as to when the radioactive particle will decay, from a statistical (not quantum) point of view, but the cat will be either alive or dead. There is no wave-particle duality; no simultaneous energy-mass particle & "moving, energy wave form" in this theory!

### <<[H]>> The universe that merged into "our own universe"

An easy explanation for:-

(i) the origin of two different "measuring systems"; "absolute measurements" & "relative measurements" &

(ii) the origin of the energy - mass - gravity, when it "can't be created or destroyed" in our universe is:- that both these "puzzles" have a common solution:-

our "original universe" had only "relative properties" of time and length i. e. space. Both of these are really "meaningless concepts" when there is only time and space present! There is "nothing as a "reference measurement" for anything in the universe"! Nothing changes! This universe is both infinite and not!

A "nearby universe" had all "absolute properties" (or some of its space & time properties could have "cancelled out" some of our space & time properties {from 3 dimensions of time?})

The whole universe of the "nearby universe" collapsed into one "universal black hole". This collapse was "mirrored" by all the energy - mass - gravity from its collapse transporting into our universe, via the "white hole" of our "big bang"!

The "white hole", "big bang" creation of "our 'combined' universe"'s properties, corresponds to "known observations":-

(i) Sudden inflation.

(ii) Energy - matter - gravity without breaking the "can't be created or destroyed" "law".

(iii) Two different "measuring systems".

(iv) High energy density start to "big bang".

(v) The even energy density from the very high energy & pressure from the collapsing "nearby universe".

(vi) There would be "slight cooling" during the transfer of all the energy - mass - gravity into our galaxy, with the final bit showing the most effect. A comparison could be made with a hose attached to a water butt. The flow has big changes at the beginning & end, with quite a gradual decrease for most of the flow. A "wormhole" between the universes would be like the hosepipe. The cooling of the flow would show up as the "older parts" of our universe being hotter. The "residual heat" of our universe, as shown up by measurement of the Cosmic Microwave Background Radiation (CMBR) could be used as a proxy for the "initial heat of the energy - mass - gravity flowing from the "white hole" / "big bang". This shows up as "hotter islands" or freckles, which would be older, on the newer background which is colder!

(vii) [not "observed"] The "nearby universe" could have had no constraints on matter "can't be created or destroyed"!

(viii) [not "observed"] Before the universe collision, the "timescale" of our "space & time only" universe is undefinable! "What happened before that?" is meaningless! It is like putting an ant on a ball, in a box, in intergalactic space, and asking it the question; "Which way is up?" and waiting for the reply in English!

### <<[!]>> The "unneeded", "esoteric ideas" of quantum theory

This "paper" of mine uses an "Occam razor approach", that there is no real need for some of the more "esoteric ideas" of quantum theories.

No need for:-

[1] the "wave - particle duality" because the waves & particles occur sequentially!

[2] the "uncertainty principal of the simultaneous measurement of position & velocity (momentum)" because they never occur simultaneously.[in moving photons or moving energy-mass particles !] They occur in sequence. Position & velocity can be likened to a caterpillar & a butterfly; never together, simultaneously, in the same insect!

[3] "Schroedinger's cat in a box experiment", because there is no "duality" in either [position and momentum] or [energy and time]!

[4] a "collapse of the wave function" because there is no need for a "choice between 2 simultaneous options" of "duality" in either [1] or [2]!

[5] "Spooky, at a distance, interaction!", because, when an electron & a positron are created they will have opposite charges & opposite spins & opposite polarisations & move off in opposite directions from the start, as will photons. The "entanglement" is built in from the very start. The spin of one photon will ALWAYS be detected as the opposite of its "entangled pair", without "Spooky, at a distance, interaction!" that is faster than light!

Time delay, caused by; gravitational bending; passing through "denser medium"; travelling along a longer path, will change the "synchronicity" of the entanglement! What the detector detects, determines what is found!

The intricacies of the aspects of Bell's theory, in respect to these insights, has not, yet, been fully assessed.

There was no initial intention for this to be anti quantum theory. It was an "emergent consequence" of the sum of the new viewpoints and the insights of the theories!

### <<[J]>> Additional thoughts

{A} This is may be a slight addition to Newton's laws:-

A "stationary, energy-mass form particle (or photon in its "energy-mass form") will follow its "ballistical, orbital, inertial trajectory" unless there is a "change in the force acting on it"! e. g. a cannonball in flight or a planet in orbit.

{B} Gravity "holds an energy-mass body" at its "fixed distance" from its larger planet, star etc. The "ballistical, orbital, inertial trajectory" of an energy-mass particle's inertia & its sequential "stationary, energy-mass form" – "moving, energy wave form" – "stationary, energy-mass form" movement, moves the energy-mass particle, at its normal height, along its "normal latitude circle", along its orbital path.

{C} The "absolute measurement" does not require an "observer". A "relative measurement" does require an "observer", but, only, in as much, as they would have to "choose" the start & end point for a "relative measurement". That same value, before the observer measures it is just "an (unobserved) unmeasured value"!

{D} For the Young's slit measurement, how can any electron travelling through the best "Earth's vacuum" not encounter  $>10^{10}$  other electron orbitals in its path!? & the same for photons interacting with electron orbitals. Interference from an electron / photon, with others, seems to be unavoidable!

{E} Predestination would seem to be built into the universe in this theory, but it could just be a "stationary, energy-mass form particle"; to "moving, energy wave form"; to "stationary, energy-mass form particle" "one-step", emergent property!

Another anti-predestination viewpoint is that no-one would say that predestination or a god is necessary for the chaotic nature of water to be turned into the highly structured nature of ice, so the "stationary, energy-mass form particle"; to stationary wave form"; to "stationary, energy-mass form particle" could be an emergent property, with the next "stationary, energy-mass form particle" being determined with as much pre-determination as where the next water molecule attaches to an ice molecule!

{F} The density of "collapsing space voids" is much higher nearer more energy-massive bodies, creating a higher gravitational force there.

{G} Is the bending of light, by large energy-mass bodies, caused only when the "photon" is in the "stationary, energy-mass form" and "caused by the pull on its energy-mass particle" during the time when they are in the "mass form"?

{H} Are photons only "massless" when they are moving in the "moving, energy wave form" (which they are in "almost all the time"!)