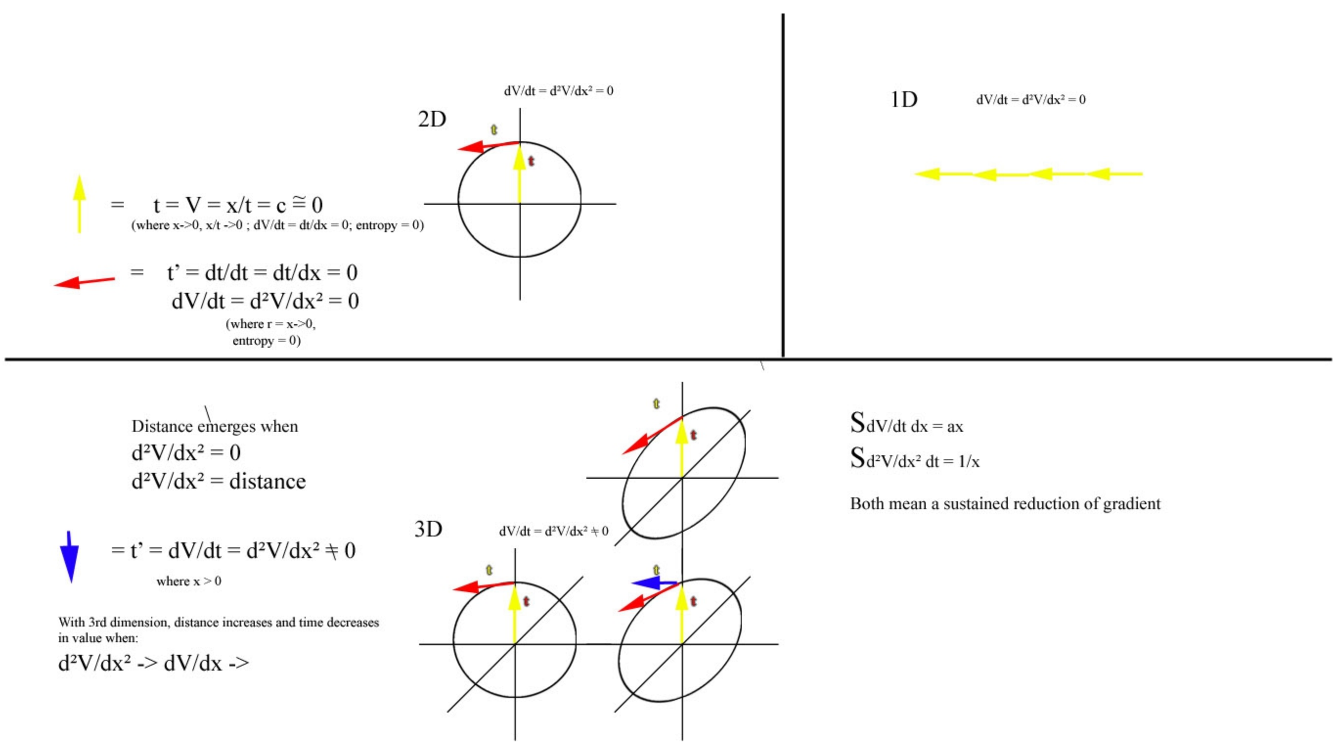
Q Equilibrium Math and Potential

Later on, we are going to be describing wavefunction structures that are made of groups of these simple angular (loop-back) paths of the dark energy of spacetime we are calling Q, (basically classical quantum wavefunctions with the added periodicity associated with the intrinsic subquantum potential). The Q are loops satisfying the equilibrium of acceleration taking place at the fundamental level, because coordinated angular motion over space is the most energy minimizing configuration, with specific geometries that are symmetrically sustaining. But this best-path in a simple Q is a 2-D path and to form structured groups, regions of spacetime neighbor each other in 3-D. The Q always point to the direction of the least-head-on collision with neighboring space, (i.e. they rotate in order to minimize relative-velocity over space), so in 3-D they will be coordinating the 2-D plane they circle on, based on what their neighbors are doing. We will find that the Q also rely on the larger group geometry in order for their max-diffusion paths to be in a stable arrangement, within the random-acceleration environment.



But let's get specific about the intuition for what the simplest vector math would look like in a field of these theoretical Q regions of raw dark energy. The first huge paradigm-note that should be made before we proceed is the fact that in the unending field of dark energy that is spacetime, any region of dark energy affects the regions adjacent to it. A 1-D force-to-diffuse-evenly does so best by a trajectory that forms a 2-D circle, but which can never be completely evenly diffused in a 3-D space because neighboring regions are trying to do the same thing and so each dx region is always in an active state of interaction with its neighbors on all sides, to attain a minimum-energy relative-velocity equilibrium. This relationship theoretically extends to infinite resolution but, geometry mitigates the differential landscape, rendering quantum clumps based on the simplest 2-D circle, (making actual scale absolutely relative).

Ironically, as we will see, the quantization and relativity are both the result of the same basic geometrical property of the measurement of relative linear velocity between invariant angular velocities dx to dx, and the resulting gradients of this scenario caused by geometric structures form the subsequent laws of physics. But for now, this section will detail in what way that basic interaction arithmetic happens between neighbors. We will begin by doing that with a time-independent snapshot.

Although it might seem strange to exclude time (the angular motion) from a force dynamic that is solely based on comparing amount of the relative linear component of motion to amount of angular motion, but we will temporarily treat the linear component between Q as being simply a component of force, in order to first see how the interaction takes place. Then we will get specific about how the angular action of time, (applied conditionally in different planes) ends up dictating how this relative linear component causes the relative “distance” measurement to occur.

Quantum wavefunctions are described as mathematically linear but Newton’s gravitation and laws of general relativity are non-linear. Ultimately the actions that take place on the dark energy medium, (in both the fundamental and macro) are the result of linear superpositions of simple velocity vector states. Linear arithmetic of superposition of Q is being applied to build geometries of compound and multiple macro-object dynamics, resulting in compound non-linear math by nature of the geometry of the differential.

With the knowledge of the geometries as stencils, we will find that basic arithmetic superposition still applies to the anatomy of the structures, (and also the way they bond to become larger structures like quarks, atoms and molecules). The aspect of the compounding that makes the math tricky, (thwarting unified field attempts), is the fact that the process of bonding the structures is a process of partial superposition states, as the simpler states overlap a part of their structures, (a part of their angular periods) allowing them to then coexist stably, as larger structures of more-macro period and increased total acceleration-reducing diffusion as they do so.

If it is not yet fully clear intuitively why relativity and the differential, together form the basic periodic Q regions, it is acceptable to momentarily consider the Q as simply an arbitrarily specific wavelength that forms a larger wavefunction configuration as a kind of fractional harmonic spatially, (and as we will see is always modulated by other random wavelengths caused by more macro structures). We will revisit the underlying basis often, giving the opportunity to develop an intuition, since this basis is it the unifying principle that is the ultimate goal of this paper.

The attempt for each dx of dark energy to accelerate to diffuse to a direction of lowest energy, and the relationship between states of vector direction dx to dx at any given time or location is the means by which data about force, mass, energy and all dark and observable conditions are communicated across spacetime. A Q's acceleration can either be interpreted as a region of spacetime dx "turning" toward the region of least conflicting velocity at each interval dt, (changing its component of its velocity with respect to its neighbor), or it can be interpreted as the region dx simply being the average of surrounding velocity components at any given time interval dt. Either way, the phenomenon of the region dx having a distinct state from the neighboring region dx+dx indicates that an equivalent of "turning" takes place and gradients tend to try to become flat via this averaging. The averaging is the communication of data and also the basis of the force and results in sustained geometries of this action.

The universal action of dark energy seeking maximum diffusion in a state of randomly-periodic change is the underlying basis for Lagrangian mechanics and the principle of least action, where geometric actions take place in a randomized environment. The change of velocity with respect to the first partial of time being equal to the average value changing with respect to the second partial of distance is the fundamental differential relationship that is the diffusion action. The base description of the diffusion action, as a function of space and time is described by the well-known heat equation differential relationship because heat conducting is just communication of acceleration state data, (as is all information transfer, force and mass).

The conducting of heat in a metal, gases in a volume and the entropy of spacetime in general is the action of diffusion dx to dx by constant averaging and thus constant acceleration toward an ultimately impossible equilibrium. The compound structures of mass simply act as buffers of this diffusion action, according to their geometries, giving rise to aliases of this diffusion action such as "temperature" of a mass.

When we compare the x,y and z components of velocity at point dx1 to those at dx2 and dx3, we have 3 options on the result of the average of each component found at dx2. We could find positive, negative or zero values for x,y and z. The action to diffuse is of course in all three dimensions, so in general we would say that the dot product of two neighboring vectors can be positive negative or zero, (acute oblique or parallel). In the strictest theory we would find a negative value when dx1 and dx3 are diverging away from dx2 or when they are converging to dx2. In general, the diffusion "force" applies to diffusing to become less divergent or diffusing to become less convergent, (lower relative velocity dx to dx in any case).

In the practical conditions that we find in the vacuum of spacetime however, 1-D vectors in a 3-D arrangement that are constantly trying to approach equilibrium would be found averaging out to the lowest possible randomized energy-density with an acute angle of 45-60 degrees, always diverging, between any two regions dx, on average over time. This means there is always a negative relative velocity dx to dx, with either positive or negative accelerations to that negative relative velocity, (a diverging-directed acceleration or converging directed). When we examine spacetime, we will be dealing with a vacuum where randomly positive or negative accelerations (dV/dt) are found within the consistent negative (acute) relative velocities, (components of c).

Observable particles will be found to exhibit consistently more-divergent accelerations. Particles are periodic in such a way as to have synchronized phases that allow neighboring regions dx to have a lower, (but still negative) relative average component of velocity between them. Since they are sustained systems, they result in a second gradient, (greater magnitude of reduced relative velocity as you get closer to the particle). We will also be observing superpositions of multiple particles, where their overlap causes a change to the second gradient of velocity, (i.e. third partial of the velocity vector with respect to x,y or z at any point x,y,z,t)

Although we have been speaking of the idealized phenomenon of diffusion to lower energy where one vector finds a lower energy path, (minimizing energy) by following more tip-to-tail with its neighbor and avoiding "head on" trajectories, (and we will continue to use this verbal shorthand) but the fact that spacetime is a randomized 3-D system means this isn't a real configuration we find. The differential relationship is the same as this, (the objective is lowest energy diffusion) but in practical reality, lowest energy simply means lowest relative velocity with respect to distance, whether that means being less head-on or less tip to tail. Parallel-planar 2-D circles is the ideal lowest energy but 2-D circles can obviously not be parallel with all their surrounding neighbors in 3-D, so we get the randomized generally-acute average configurations.

This dynamic equilibrium relationship between Q in an instantaneous frame can be represented mathematically, yielding its vector at any given x,y,z and t by a calculation of the average of the components of velocity of all other Q surrounding any particular Q in question. The x components of velocity of all the surrounding 12 Q (i.e. kissing Planck-spheres) at t=1 are added together and divided by 12. The same is done for the y and z components to produce an instantaneous resultant velocity vector [x,y,z] that represents the minimum energy state of diffusion. The resultant 3d velocity vector is the new vector trajectory for the Q, for time t=2 and its acceleration with respect to time will be from the vector at t=1 to the vector at t=2. As any of the neighboring Q experience a change in a component of velocity, this change is reflected in the average and the attempt to equilibrium is dynamically continued.

A change in any neighbor reaches the subject Q at speed c and thus information about structures and random fluctuations alike propagate through spacetime at c. Again, the reason for the invariant angular velocity in each Q resulting in relative-velocities that are linear between Q is the basis of the relativistic phenomina and will be discussed at length later but as a quick preview, since the ambient acceleration in the universe is homogeneous, the average relative velocity between Q is consistent, (the average (relative velocity) overlap of the pure angular minimum energy paths is the same) and so the speed of light is consistent, (the angular change in a Q dt per the linear change dx). We will explore how wave interactions like acceleration alter this angular to linear dynamic, (time keeping/length keeping metric) by altering the total period of a group of Q acting as a structure, (particle etc).

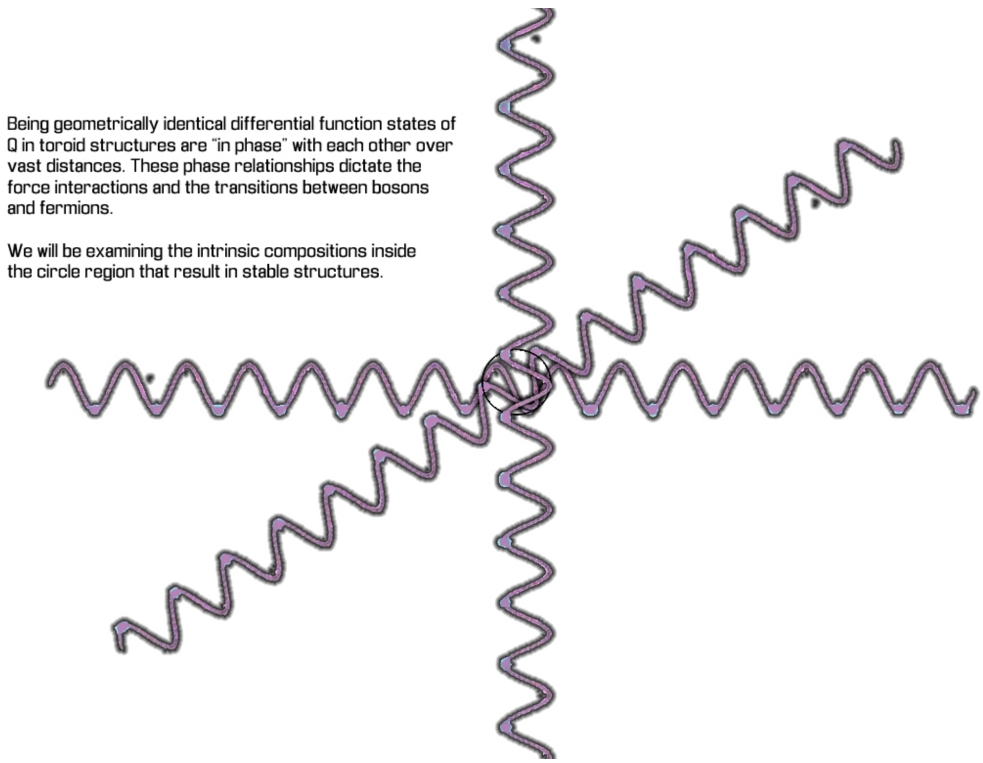
The rates of acceleration as functions of space and time conform exactly to that of the differential heat equation. The force between Q which causes the expansion of spacetime and the relativistic mass energy equivalence, as it describes particles, are directly derived from this relationship. As we will see, the relativistic relationship between time and space in particles is a property of the changes that their periodic geometries cause to the average overlap of that pure-angular planar path, as dark energy constantly is seeking lowest energy directions of that planar path in 3-D, (since the planar path is already the 2-D lowest energy geometry. Wavefunction structures of Q and acceleration of wavefunctions, (by multiple structures in proximity) change the average gradient, (i.e. that average overlap of circle paths) by the synchrony of those circle orientations that the fermion and boson geometries provide.

It's worth taking a pause to focus in on how force is observed on the minute scale with only velocity and direction as variables. Acceleration resulting in shifted equilibrium-angles of velocity between two Q causes a shifted force balance between them. Stated simply, when one pivots it makes the other one pivot away to keep the force between the two of them at a minimum. The basic property of spacetime pivoting to a trajectory that is at minimum-conflict with the trajectories of the next neighboring region of space, effectively results in what has classically been considered theoretical extra-dimensional space, in the attempts to describe a unified quantum spacetime.

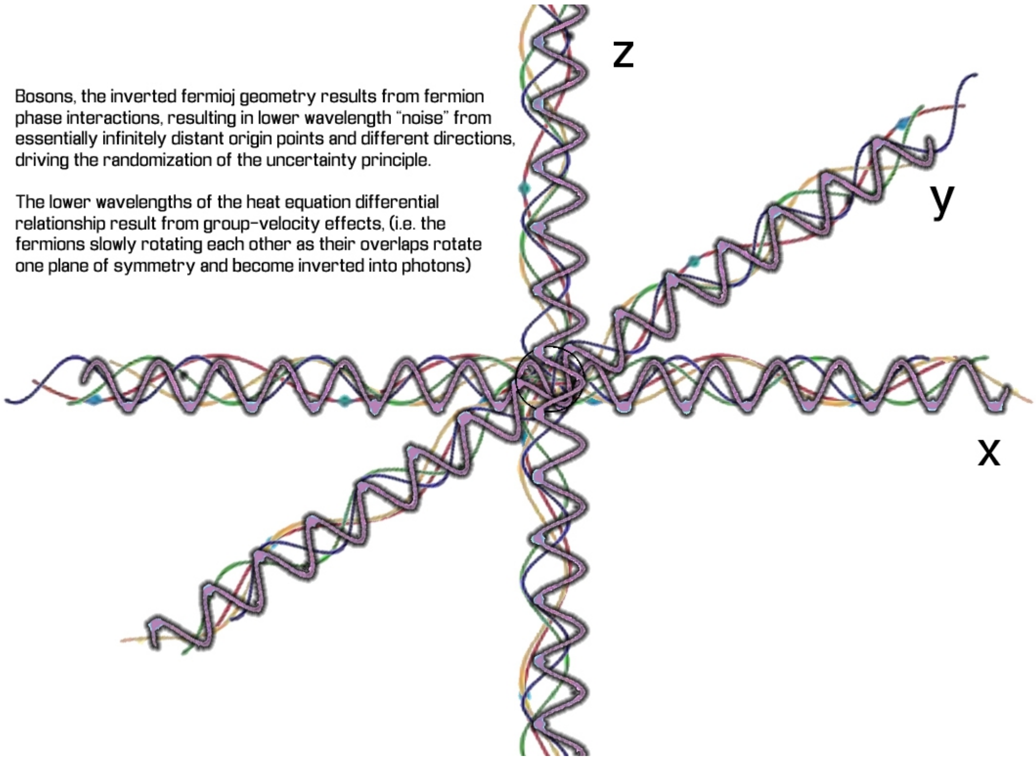
Extra dimensions in this case simply meaning degrees of freedom acting in a specific way on a smaller scale, that have a net-result of the properties of the degrees of freedom measured on the larger scale. The motion of a rubber band, (if a rubber band was immeasurable), could be considered an "extra spacial dimension" if the motion of a rubber-band-car's wheels were considered "absolute" in space, (smallest detectable thing). Once the action of a rubber band is describable it looses the spooky status as living in higher dimensional space.

Essentially, we will be describing these Q regions which simply pivot the direction of their velocity @c, through complete circles in 3d space and while doing so, keep the plane of those circles to a minimum of relative velocity with their next door neighbors on all sides (all keeping conflicting trajectories at a minimum), and groups of these circling Q are arranged in larger geometries that allow the looping actions to be sustainable as 3d groups, (i.e. none of the circling Q in the larger group are forced to "conflict" with neighbors in order to smoothly complete their synchronized pure-angular circuits). Like the pistons in an engine completing each of their individual axial circuits, jointly acting to complete the 360 rotation of a crank shaft about its axis, the larger geometry of the fermion allows the timing of all pure-axial Q involved to complete their circuits in 3d with minimized conflict with the Q in the group via symmetry.

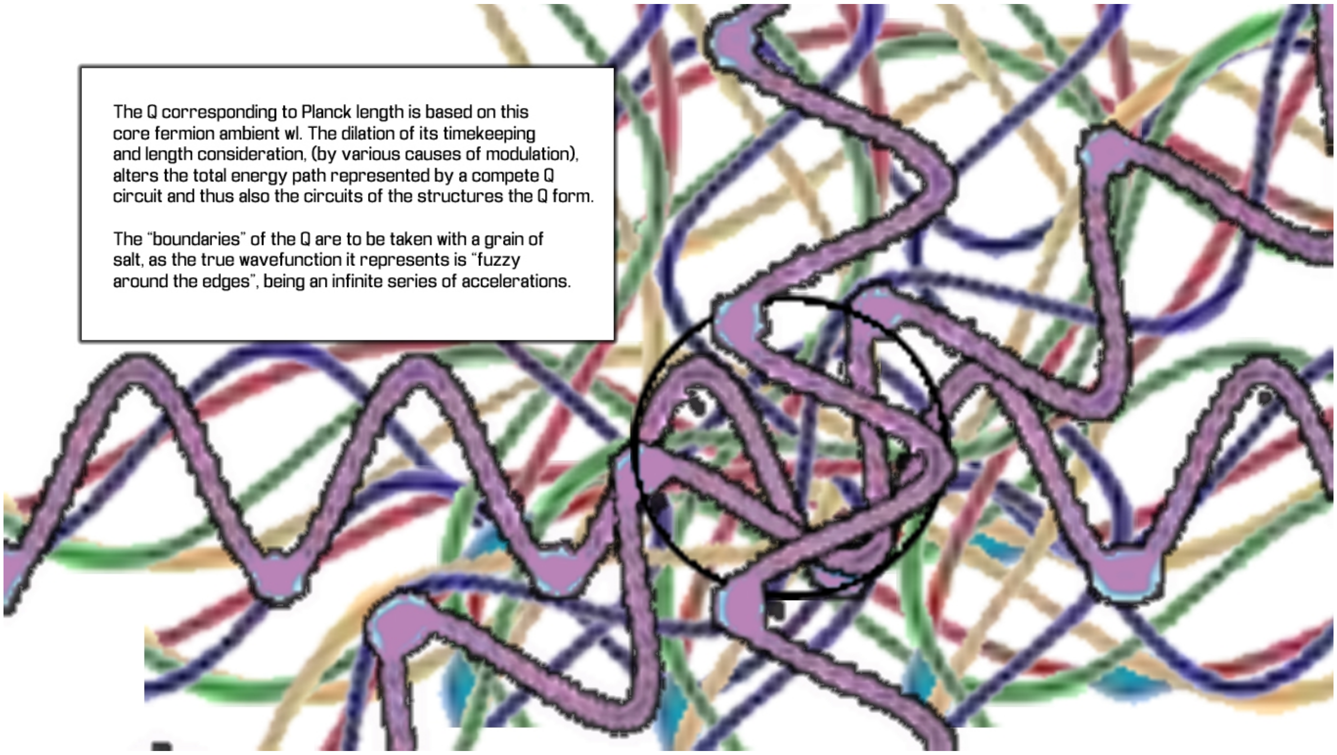
The single caveat that presents obfuscation to the whole puzzle is the fact that the "loops" the Q are completing are not just pure, simple velocities @c around in a loop, the loops are circuits of acceleration, (i.e. slight changes in the natural randomized motion of the Q in randomized spacetime). At any given time, the velocity vector of a single Q will not necessarily be be pointed in the direction that its circuit will complete, it will simply be pointed in that loop direction a little MORE than where it would randomly be. The cause of the “texture” of random acceleration in the vacuum is actually the end result of the fact that stable geometries of diffusion tend to form, (and bond creating longer stable wavelengths) this topic will be of pivotal significance in later sections when we go into specifics about entropy and the ramifications of relativity, but we will address the overview briefly to set the context for the next few sections.



So we will find that the invariance of the speed of light, the relativity of the measurement of time and distance, and the expansion and contraction of the universe are all intimately connected to the phenominon of the ambient differential state of the fundamantal Q periodic units that constitute the particles we measure with. We will see that it is not a paradox that these Q units that serve as the building blocks for fermions, are modulated by random accelerations that are caused by the higher order interactions of fermions themselves. The state of modulation evolves with the ambient state of entropy in matter in the universe. The way their paths geometrically optimize the tendency to minimize conflicting vectors of velocity @c, results in a fermion footprint radially from all particles, with temperature based on entropy. The base Q is then modulated by the harmonic result of the interesting phase interactions, (rotations, propagations, bonding etc) of those wave structures, taking place in 3d.



Q to Q communication gets mathematically interesting, (bringing Euler into the limelight) when combined with the fact that the calculation of the average at any point is affected not only by changes in deflection angle of directly-neighboring Q but are affected indirectly by neighbors of neighbors and so-on out to infinity, representing lower orders of differential influence on any given point.



To be exact, the true "size" of a Q in relative terms depends on the ambient dark energy. Since size and duration are relative, and as we will see, the "size" of the Q are directly the result of the temperature of ambient dark energy. A Q at its most basic is simply a complete circle of acceleration through dark energy. All subsequently larger macro objects, however circular their structures and travel may appear on a macro level, are circles made of circles, (phase structures made of Q wavelength). Like a game of duck duck goose, a Q is just a circular path through the ambient acceleration of spacetime, the more ambient temperature is associated with the loop, the more dilation the Q is subject to, (the more ducks for every goose).

Stated differently, the more entropy in spacetime, (due to formation of complex, lower-energy structures), the lower the ambient "temperature" of the modulation of the Q. We will see that the state of entropy is the state of an intimate evolving dynamic between the fermion and it's inverse geometry the boson, as diffusion to lowest energy is pursued in a non-linear cyclical pattern of expansion and contraction.

So in this way, dark energy effectively provides a force-condensate to particles, so far as there is a ratio between the ambient random acceleration and the structured reduction-in-ambient caused by observable particles, (again, this ratio does not provide a truly inexhaustible condensate, but conforms to a cyclical differential relationship, where the ratio of the curvature provided by mass consolidation and the ambient acceleration form a dynamic non-linear equilibrium).

Although possibly obvious, when doing analysis of these systems it is important to remember that the looping circuits in the accelerations of the Q are often accomplished by non-intuitive actions of the random vector system. When visualizing, it is important to remember to keep the velocity and acceleration vector systems distinct from one another, as well as keeping the random and periodic accelerations separate, mentally. The loops of acceleration are being accomplished in essentially a 3d pressure system that is randomized, so many of the vector actions that "accomplish the goal" of the fixed-periodic (non random) 2d acceleration loops are non-intuitive, (zig-zaggy). For instance a Q that must propagate its acceleration through a neighbor that is accelerating in the opposite direction will simply result in a reduction of the acceleration of the neighbor in that opposite direction and the other components of acceleration will "carry" the pressure change through the loop. Neither the velocity vector direction alone, nor the acceleration direction alone at a point will be enough to give an clear indication of the action of a particle, only the observation that the acceleration conforms to a particular plane of rotation with a probability greater than zero will result in description of what is happening with observables

To be sure, there are some configurations of adjacent Q velocity vectors that at first glance seem incapable of propagating an acceleration in a direction that would conform to the structure of a particle. The fact that accelerations act with two components but have a third degree of freedom makes clear how the rotations reflect the average of the surrounding components. Some adjacent accelerations result in a partially lateral rotation in the neighbor, since the calculation of the average simple puts the components NOT in the direction of the acceleration at a diminished impact on the average.

The components of acceleration in the Q along its loop path may not always show a positive acceleration in the direction of that path, within the random vector system. The intuitive-seeming acceleration may be carried through in the next Q over. This is the base reason for paths of travel of particles being randomized but with the shortest path most likely, (like lightning's path). In other words zagging left as a response to an acceleration vector in a "forward" direction might be the practical result of that vector superposed with whatever random vector that might have otherwise had the state of the Q accelerating "backward".

Terms of Darkness

Navigating the boundary between the dark universe and the observable universe is going to require some terminology, (some of which we have already been using), to be clarified as we chart the nuanced phenomenon. Since dark-energy dynamics form the more-fundamental "background" for the "foreground" of classical observable physics, the use of familiar observable terms will get the prefix "dark" to distinguish them, such as dark curvature, dark wavelength, dark energy, dark matter etc. The overarching difference between dark spacetime and observable spacetime is the unformatted randomness of energy behavior. Very simply, dark energy becomes observable energy, (semantically) when its state/period of acceleration is formatted such that it interacts with observables.

The first concept is dark energy. Observable energy E is the quantity of dark energy that forms the geometrical structure of a particle within the range that it is reactive with observables. These structures have "footprints" in dark energy that are quantifiable beyond the boundaries of their core structures. Forces are interactions, (i.e. overlaps) of this peripheral energy footprint and those interactions themselves develop with focal epicenters that we will find to have direct corresponding geometries to matter particles which give them the mathematical characteristics such as spin and charge etc. Particles thus interact and accelerate one another, resulting in increases to the quantities of their core structures as they mutually contribute to each other's geometries when they superpose states as communicated across any distance through spacetime.

As we will see, periodic looping paths through a diffusing energy-minimizing spacetime result in core symmetries that are localized and quantifiable geometric structures as mass and energy particles based on configurations of what we would call momentum with an extra degree of freedom spatially. Rather than conjuring extra physical dimensions, the extra degree of freedom simply corresponds to a compound symmetry of motion in 3-D space and time. Just as we do not perceive the molecular kinetic energy of water to be acting in extra physical dimensions, when describing the waves on the sea, the action of the subspace medium is just additional geometry of motion in 3-D. These structures also affect their surrounding spacetime with facets of that motion symmetry, imprinting their periodicity to spacetime radially, thus overlapping.

Dark mass is another term. The properties of the subquantum symmetry and the way it is propagated can be likened to the molecular reactivity and kinetics of water molecules, where a solute (or temperature etc) is propagated radially from a source based on the chemistry and the geometry of the kinetic interaction, (both of which are manifestations of the underlying differential geometries we will be studying).

This is also the underlying source of the ambiguity between wave and particle, force and photon, virtual photon and field. As we will see, within the random accelerations of spacetime, a looping particle geometry causes a localized second gradient, (reduction in the ambient acceleration Q-to-Q, i.e. increased diffusion), something that takes place, again with diminishing intensity out to infinity, including fractional/incomplete particles like virtuals.

When two particles with opposite loop directions annihilate, their gradient' collapses, sending fixed period content radially in the form of a loss of that increased diffusion. There is therefore "observability" produced in dark energy by the localized mass loops and by their inverse geometry as the photon. This landscape is simplified if we come to terms with the fact that the discrete definitions in the standard model all have a common trait in their being structured paths of dark energy @c, and that there is unobservable dark energy that exists that forms the things that are observable. The supporting data is already well established, although we have not come to direct terms with the implications in a consolidated description. The only missing data that rectifies the semantics with the empirical is the specifics of these geometries, which we will investigate in detail.

The next term is dark curvature. Curvature is the familiar relativistic phenomenon in spacetime that is most associated with what mass does to spacetime. Dark-curvature is to curvature what dark-energy is to energy. It is the random ambient curvature that consists of all possible periods of acceleration in spacetime and therefore is not "pronounced". It is energy in the state of having no net predictable gradient and so does not qualify as observable matter or energy. The dark energy of motion is necessarily accelerating at all points in spacetime but with random period lacking group structure. We will find that the state of this ambient net-canceled gradient is at the heart of relativity and the expansion/contraction of spacetime.

Depending on convention, and despite the last statement regarding how it integrates to zero in any one spacial direction, it could be said that dark curvature (random ambient acceleration) is "positive curvature" and observable mass curvature is "negative curvature", because the structures of matter are sustained reductions in the ambient curvature, (i.e. reduced average relative linear velocity between Q, per angular motion), but dark curvature and observable curvature carry less ambiguity as terms.

We might also say that observable energy curvature such as photons are an oscillation between positive curvature and negative curvature, but we will find that this is one step more complicated, since the handed nature of mass makes what we define as the “negative” curvature in the polarity of a photon is relative to the charge of the particle.

Again, observable curvature, (as exhibited by mass), is a region of reduced dark curvature, (i.e. a nonzero gradient of acceleration vectors of dark energy). The closer to a particle, the greater the decrease in ambient random acceleration, (dark curvature) and the greater the increase in observable curvature. With closer proximity, the Q that are organized in sustainable periodic loops cause an increased component of fixed period acceleration (probability amplitude of that organization), in random spacetime.

The next term is diffusion. The concept of diffusion as used in this text means “acceleration toward the lowest energy vector trajectory of dark energy”, (i.e. average net vector of relative velocity). The action to diffuse is the differential relationship that manifests as a “force” which organizes into structures and in turn governs the behavior of those structures.

If any group of these regions of spacetime synchronize the period of their paths of dark-curvature, they necessarily reduce the overall dark-curvature they experience. Like in fluid dynamics, traffic patterns or biological systems, the more synchronized the motion is of the constituent regions, the less turbulence occurs on the smaller scales. The larger the group is, which has been synchronized, the lower the dark-energy-density. Spacetime is the existence of motion energy and the more dense that motion energy is (greater acceleration), the lower the entropy. High entropy represents high efficiency of the energy of spacetime, over space.

Another term that will be used frequently is symmetry. Although this concept is mathematically well established, how it fits into the intuition of structures within diffusion of dark-energy is important. As we have said, (and will reiterate ad-nauseam) the ideal lowest relative-velocity geometry is pure angular motion, where it can be best synchronized in a 3-D space as phase-synchronized groups. Particles therefor rely on 360 acceleration in order to be particles (to be different than average random). And since spacetime’s action to lowest energy is randomized, the arrangement of structure in a particle must be be "durable", (i.e. impervious to the random accelerations that would destroy their synchrony.

Specifically, those structures are synchronizations of phase in groups spatially-complete enough to provide redundancy of the "averaging" (communication Q to Q) and so protects from random acceleration, which might be a destructive superposition to the synchronization. In short, the dimensions of the geometry must mathematically be such that the superpositions from other Q within the structure outway the superpositions from the random, so that they can't rotate beyond180 degrees from the synchronization pattern, (the rest geometry).

Size of a Q

When we get into the deeper discussion of pattern interaction and the math involved, it will be important that the Q's role is understood intuitively. So let's revisit why it is the minimum measurable distance, (the Planck length). If dark energy is infinitely divisible, how are there not infinitely measurable distances? It is very instinctive to think of measuring as being something abstract and infinite, but there is a practical reality involved. The "stuff" of spacetime and dark energy is randomized. With a ruler that constantly changes the definition of a meter, measure-ability no longer is a rational action and no states could be finite. It requires geometry to make "measuring" a rational thing to do. Even if a "meter" changes from being a Planck-length to the diameter of a galaxy, the circumference of a circle is still the circumference of a circle at any given change of unit and 2(pi)r holds true. So why does the random motion of dark energy end up forming these geometries?

The answer is to do with why and to where dark energy moves and the confines of the space it is moving in. These finite factors govern the major measurable trends in the ocean of random infinite divisibility and take the form of a relationship of time and space derivatives of that invariant velocity. Again, minimizing that motion energy means, rotating in a circle and rotating in a way that keeps the relative velocity with neighboring circle paths at a minimum.

The angular change of invariant motion, with respect to the 3 Euclidean spacial coordinates (rotation on 2-D planes in geometric format i.e. "time") is equal to the changes of invariant motion with respect to the second spatial change. The time derivative (angular) of velocity equals the second space derivative.

In other words when we hold a fixed 3-D grid, dark energy is turning in circles on random planes of rotation. When there are particles, the rotation distribution conforms to a geometry, (on what planes that dark energy angular action will be found becomes predictable). In the random rotation orientation of the vacuum, we might find the rotation to be in the xy plane in a positive direction 16.6% of the time on average, constantly with a positive acceleration in the xy plane 16.6% of the time and so on. Changes in Euclidean measurement of velocity, with respect to 1 circumference of angular motion, (on any plane) is the time derivative of velocity. Spacetime is accelerating with respect to time constantly, the invariant velocity of dark energy is constantly angular trying to find the least conflicting plane and so there is constantly an average ambient relative velocity at any given time, between and two regions dx.

When we "observe" an acceleration with respect to time we are observing an acceleration with respect to time that is conformed to the predictable geometries of particles. This gives spacetime in that region an angular motion that has a positive or negative direction that is predictably measurable compared to the random. The linear invariant velocity we call "the speed of light" is the change in random-plane angular motion to conformed angular motion and is the quantity of (the average absolute value of the relative linear velocity between Q, i.e. absolute of ambient) divided by (total length of path to complete a circumference on the plane conforming to particle geometry).

Motion in a straight line is not observable as-such, in the angular fabric of spacetime, but is a macro phenomenon that occurs as an artifact of wave interaction. Linear motion of course exists on the scale of the Q but exists as mathematical distinctions between regions of wave interactions, (comparing periods and components of relative velocity).

Loosely speaking, this relationship can be seen in water waves, where the water molecules themselves, in a pond are not moving horizontally, but the geometry of the wave energy does move horizontally. Ultimately all truly linear motion of this kind will prove to be varieties of that group-velocity. Within the dark energy of spacetime, the concept of "linear" trajectory of energy is always relative to an infinite series of ultimately circular trajectories, i.e. the circumference of a circle with a large circle is more straight than the circumference of a smaller circle; combine two opposing circle-directions and you will get the non-canceling linear component that is their sum where their circumferences adjoin.

Unlike a pond, linear acceleration that completes a returning-force circuit within a 3D medium, (according to a stable 3D geometry of such symmetry), can form a complex set of geometric handed-polarities that affect the accelerations in the wave geometries found in spacetime. All of these geometric wave symmetries are ultimately measurable by these underlying circular Q sub-symmetries. As we will discuss in detail, this capability for polarity of waves comprised of vector directions of invariant velocity causes the composition of gravitation and all of the force interactions between wavefunctions, as well as the substances of mass.

All the finite describably-periodic actions are based on geometry being finite with a random system. But so what do those “fuzzy” boundaries look like if size is completely arbitrary and only geometry matters? The short answer is that geometries interact geometrically and smaller scales are just random.

End of Section 3