Anatomy of the Spin ½ Toroid

From any side of the "donut", the complimentary orthogonal acceleration of the minor axis radiates outward infinitely as the inverse square, but the phenomenon of the z components canceling across the major axis makes it so the vector direction on the opposite side is not radiated outward in the acceleration data no matter where you look. The major axis symmetry of a spin1/2 particle only exists at the core of the particle.

Similar to the fact that you can't see the opposite side or the hole of a donut when you view a donut on its edge, the symmetrical cancellation to zero of acceleration in the z component, does not propagate outward in pure rest particle, only the spin 1 symmetry propagates. The center symmetry exists as the cancellation of propagation of state itself.

Since the oscillations of each Q's acceleration directions for the z components of the toroid have phases that are staggered as you go around the major axis, they conform to the arrangement with least force between any one Q and they also equally and oppositely cancel the z components of acceleration of each of the Q across the major axis, in all 360 degrees of that axis. So each Q neighboring the center Q radiates changes to z direction velocity vectors radially, out away from the center, but all of its vector changes are impossibly blocked from crossing the center and radiating out the other side. The minor axis symmetry has a configuration that partially blocks information about its structure from the outside world, until it starts moving.

In a manner that we must come to terms with, the radiation of state radially from a particle and its "motion" are one and the same propagation of differential state. When a fermion moves, (as we will study in detail), it will begin to radiate its ½ minor-axis symmetry radially, in the direction of motion, as the result of disproportionate cancellation across its center. This will happen because of interaction with other fermions and the handed gradient' they represent. One side of the donut will cancel in Z more than the other and so the radiated state will become the motion, carrying that ½ symmetry as the propagation of state.

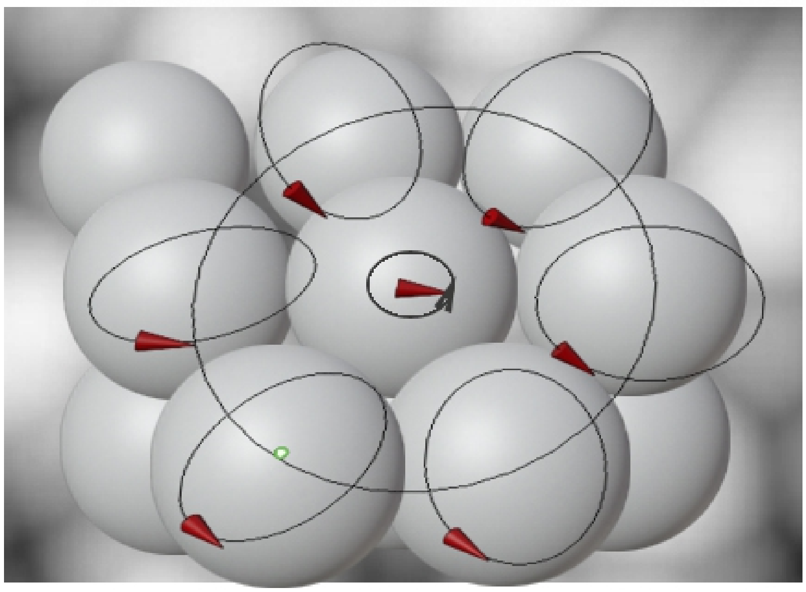
Tumble and Z-slip

In spacetime, each Q has an infinite stack of orders of magnitude of acceleration. Each order of magnitude has a random component of acceleration in the function stack, so any applied acceleration to that region is applied to the infinite series of accelerations, accounted-for by the exponential function. The orders of magnitude contained in the Q state represent the acceleration influences of particles at various distances and orientations.

So the lowest-energy rotation state for any Q region in spacetime can be seen as "feeding" its state data radially to all of spacetime, filtered through its neighbors and their neighbors and their neighbor's neighbors and so on infinitely, without "losses" of the state data in the classical sense of the word, but with a reduction of magnitude in the stack of state data at any dx, therefore falling off exponentially as a function of radius from the state-reinforcing structure of a particle, The relationship between the inverse square and the exponential will be discussed later.

This exponential stack of state content at any point in spacetime and the changes in amplitude conforming to the exponential will prove to be the underlying mechanism governing motion of particles themselves. Since the propagation of any changes in state data of a periodic system (particle), from one Q to a neighboring Q is based entirely on the tendency for the Q to maintain lowest-energy trajectories, a toroidal "spinor" geometry can exhibit some unique behaviors.

Visualizing the behavior of the diffusion dynamics within the Q can be challenging. It may be useful to consider swirling water as a metaphor, where in each Q the x,y components of water flow are associated with the primary toroid axis and the z component is associated with the secondary toroid axis. Each Q has its own flow, which, in a rest particle, can roughly be visualized as a ring of flow oriented at a 45 degree angle to the primary axis. We can depict the Q as a sphere, where the plain of pure angular differential path will be found.

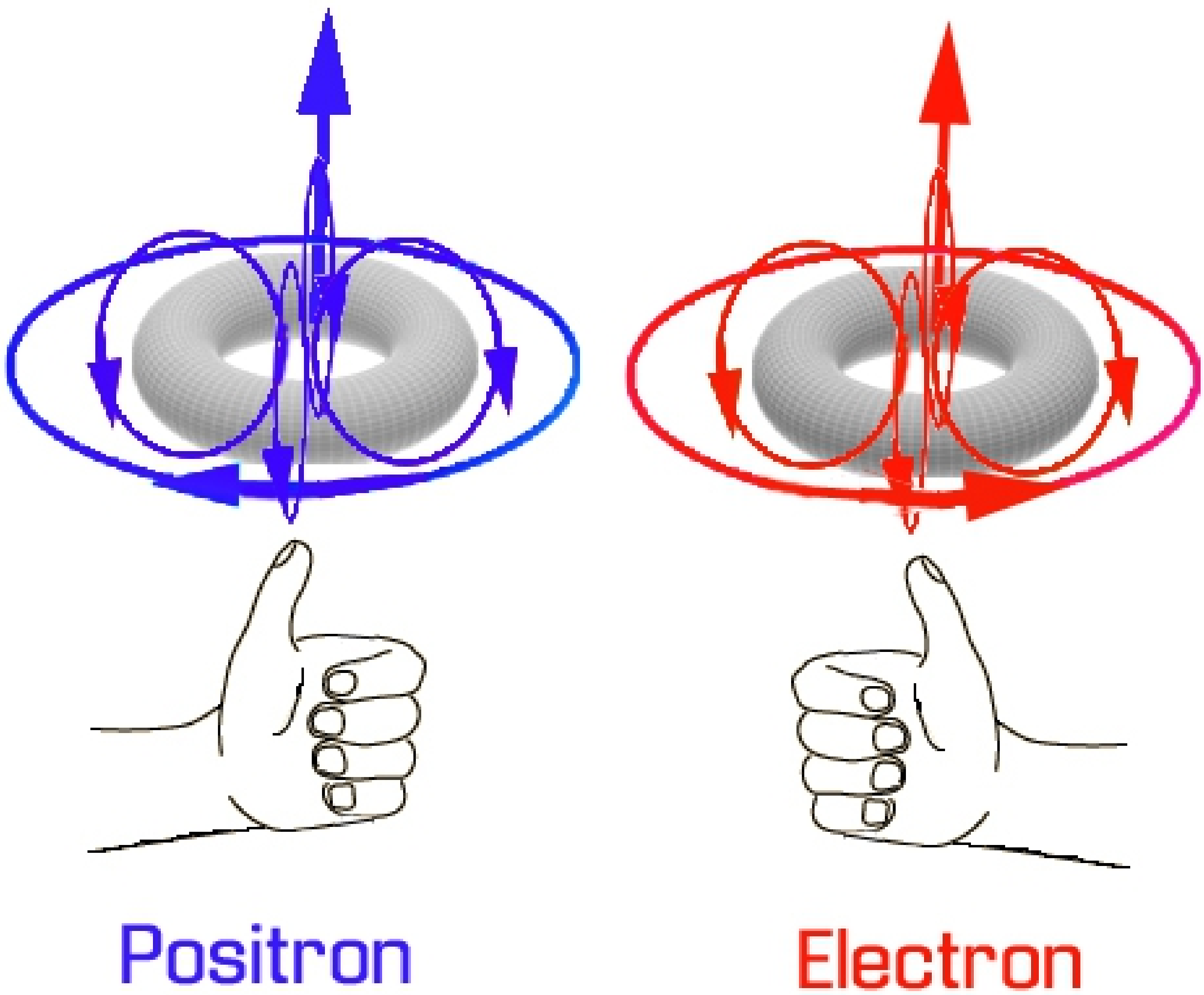


The primary and secondary axes of the toroid represent paths of “flow” around in circles, where the secondary acceleration minimizing symmetry cancels to zero in the center Q but both primary and secondary are present in the Q radial to the center. When a secondary particle is superposed at any distance away, the resulting paths of gradient-reduction would be enhanced by the other particle’s acceleration superposed, (i.e. the second particle’s loop components would either further synchronize, again, by dominating over the random acceleration by simple proximity), or be destructive to the synchronization by directly causing added acceleration, (opposed rotation direction).

To reiterate, communication Q-to-Q is constant, radially and tangentially within the toroid structure, being the differential that is the force and the state that defines the structure. If a nearby particle’s data rotates the path-angle of the nearest Q's acceleration in another particle, in can be said that the change of diffusion force in that initial Q "pushes" on the other Q in its structure, causing them to then also rotate into their new axis position, as a chain effect, but it is also accurate to say the added vector state function from the nearby particle simply superposes on, (sums with) every Q in the particle. Thus is the linear process of state addition, as communication and particle superposition. After all, the minimization of energy relationship between Q is the way data propagates and also the way the vectors sum to cause rotations. The periodic synchronized coherence of the symmetry allows the state data to be superposed as a unit. However, analyzing the propagation sequence like a chain of events allows it to more clear what the entire unit is doing, by stepping through the increments of time. Which we will do.

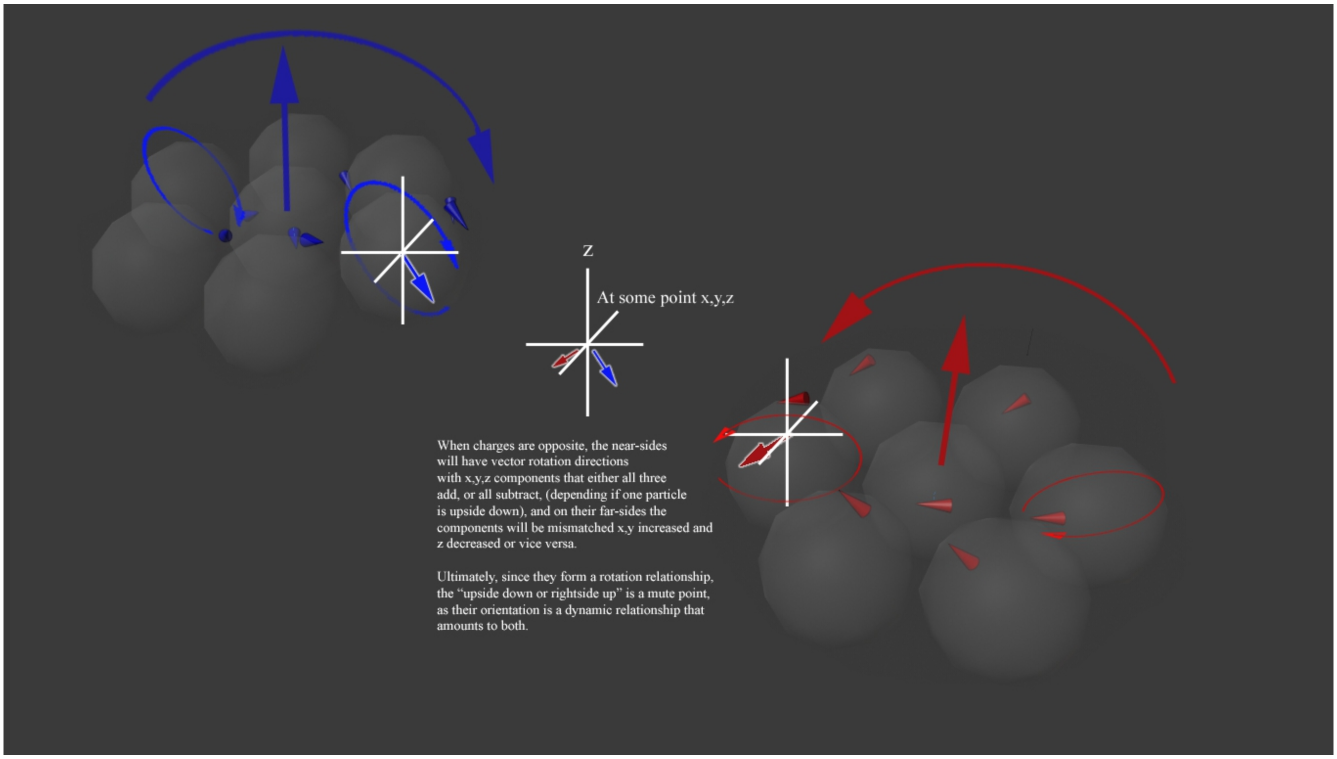
In our toroid, since the z component of the nearby particle's state data is canceled across its center, only the phase of z component found on the nearest facing side of the nearby toroid will propagate to superimpose with the rest of our particle, (in the same way only a narrow band of photons that come from the sun actually hit earth). And because of this, the spinor z-axis cancellation configuration will be affected because the state coming from the nearby particle will superpose differently on their near, (facing) sides of our toroid, than it does on its not-facing, (away) sides. For instance the "up" z component coming from a nearby particle might superpose constructively with an "up" on the near side of our particle but superpose destructively with the "down" z component on the back side of our particle.

This means that with a nearby particle that is like-handed, (e.g. electron on electron), the state data that reaches the NEAR side of our particle will result in a superposition where the x and y components are in phase and so increase the probability amplitude of our particle in the x,y direction, but it will decrease the PA of the z component. On the FAR side of our particle it would enhance the x,y, and z. In this way, fermion superposition will induce third gradients in one another, causing lots of interesting behaviors.

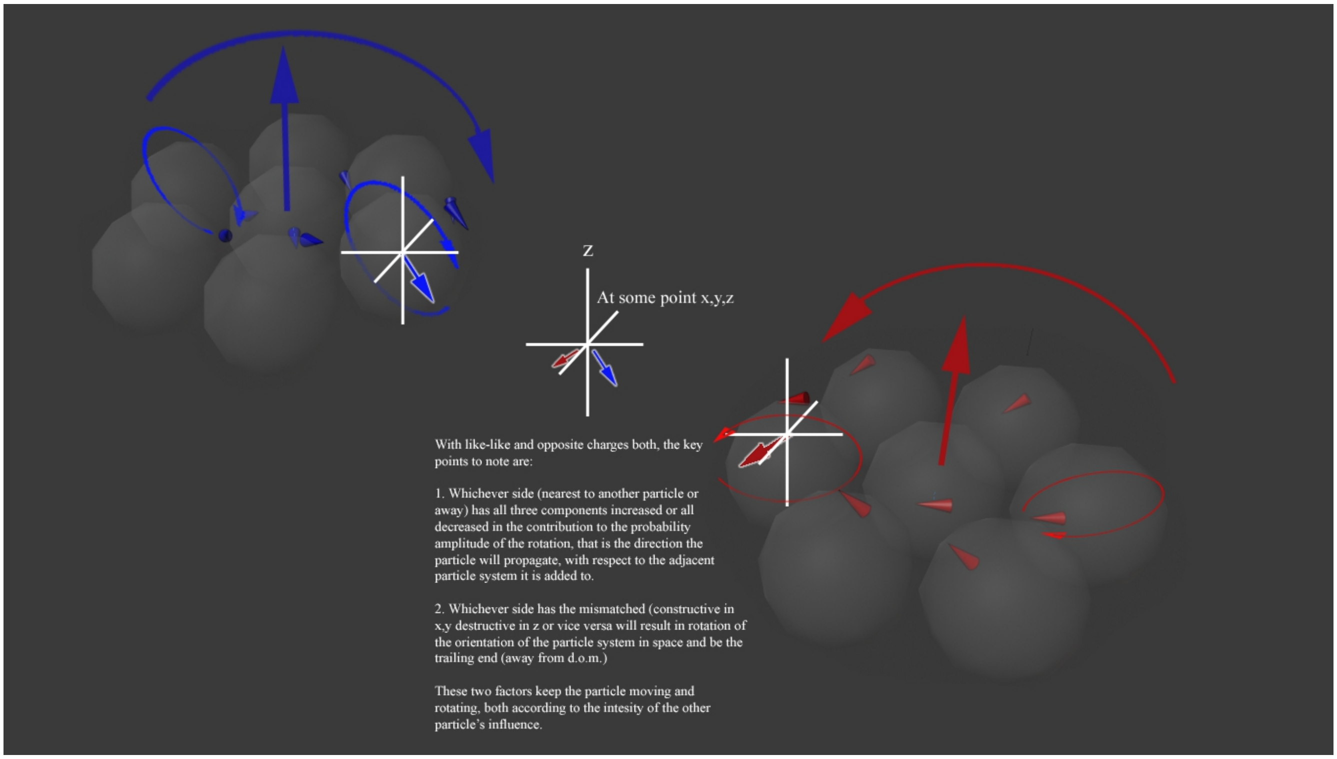


The fingers of each hand denote the direction of acceleration/rotation about the primary axis.

The thumb denotes the direction of acceleration/ rotation of the secondary axes through the center.



With a nearby opposite-handed particle, the state data that reaches the near-side of our particle will cause a decrease in the probability amplitude in z our particle on that near side. The far side of opposite handed particles will have an increased PA in the z component, accompanied by a decrease in the PA in the x,y direction. This constructive primary axis symmetry but destructive secondary axis symmetry, on only one side of the spinor, will cause a twisting-shift in the diffusion equilibrium of the particle, (i.e. the pure-angular Q path of minimum acceleration-with-respect-to-neighbors will rotate), and it will bring the whole particle with it, as that rotation propagates to the other Q in the particle. We will explore that in detail in an upcoming section.



If we step back and "combine" the actions of both of these orientation possibilities, and look at the action on the near and far sides we arrive at what action is taking place in realtime, on the particle as a whole. The realtime dynamic is in truth a constant "feed" of state data from the other nearby particle and a constant feed of change to the second gradient, between particles. The flow of vector sum conditions between up and down orientation and the near and far side states reveals the overall motion. The imbalances to the xy and z symmetries they present make a constant action to attempt new equilibrium. The net result is a rotation of the entire particle and a displacement of the entire particle location in spacetime, as a move for the whole structures of both to balance the equilibrium "tilt" this dynamic causes them.

It is important to note at this point that this apparent "leak" (symmetry tilt) of the acceleration equilibrium carried by the z component, across the center of the donut, does not result in a failure of the particle to sustain itself. The toroid geometry satisfies the "least conflicting velocity vector angles between Q" configuration and continues to do so, even with the z component tipped in this way. The feed of diffusion pressure from spacetime itself, arranged in this lowest energy circuit, continues to flow in the circuits, (again, consisting of the synchronized accelerations along the primary and secondary axes of the Q in the structure).

The broken symmetry of the z component, caused by the superposition with the adjacent particle will change that most important trait of the rest toroid: its one-sided symmetry propagation, (no longer is only the facing side of the donut symmetry exposed, the imbalance causes both sides to propagate radially). Again, at the risk of being repetitive, all regions of spacetime communicate alterations of their lowest-energy-trajectory equilibrium to their neighbors, but the group synchrony found in the accelerations of a particle give it a periodic, measurable acceleration state.

The periodic state data that is constantly propagating away falls off in intensity of the PA radially from the donut. So the toroid is always radiating state data away from it at c, but in a fermion at absolute rest, the state data from the left side of the donut doesn't propagate out the right side of the donut. The x,y components propagate out the same on all sides, but the z from the left is canceled across the middle by the z component from the right.

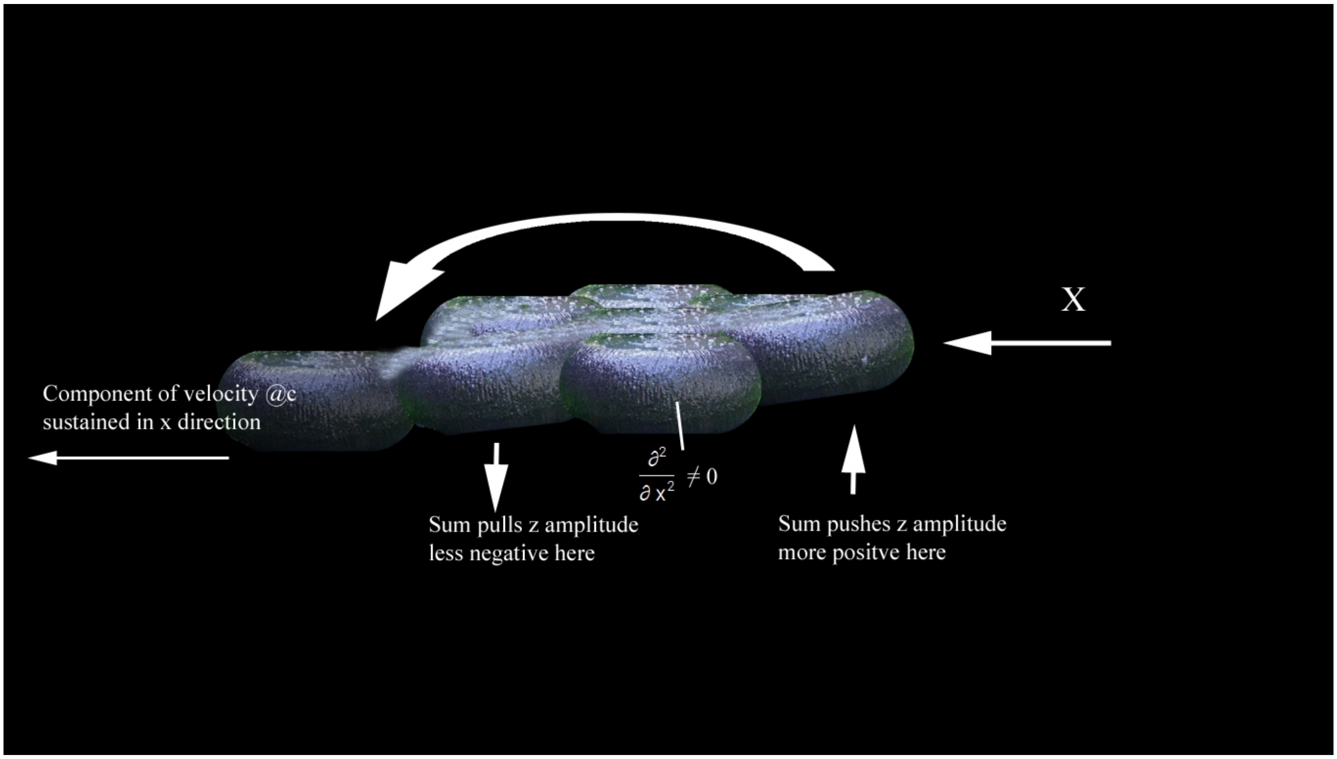
When a "field" from a nearby particle, (which only propagates half its z state), causes an imbalance in the z component of our particle, the middle of the donut now has a non-zero periodic z and our particle begins to fractionally propagate its whole z symmetry, instead of it being canceled across the middle. In other words, the particle begins to travel.

But all propagation between Q happens at c, so we might think that the particle should instantly accelerate to the speed of light. But when we consider that the structure, even at perfect rest, is "made of" propagation between Q at c. At t=1 the imposed second gradient causes the small z component imbalance that causes the center Q to be non-zero (not fully canceled), this shifts what is called "the center" slightly, toward the direction of motion, (one Q forward in the direction of motion is less than its full z component now because the center Q is no longer zero, i.e. it is turning into the new "middle" by reducing to zero), but since the second gradient continues to exist, at t=2, the center Q is even more non-zero, (and the next Q forward is reducing further toward zero).

As we will see, superposing two particles together causes Euler's exponential growth to be what governs acceleration, in this compounding of lopsided-ness that results from the second gradient. Euler steps in because these balances of components that are affected during superpositions are each always an infinite series of accelerations, with random acceleration as the ever-present fractional backdrop.

So as far as velocity of the whole particle, a weak field from a distant neighboring particle causes a weak tilt in the z symmetry causing a weak "whole donut" state data to move in a straight line (and rotate as it does so), either away from the nearby particle or toward it. But the feed of that weak field causes our particle imbalance to "grow" exponentially, according to field strength and time. This growth is according to the exponential function, again because an alteration of the "stack" of acceleration texture at any point in spacetime conforms to the infinite series. Each time the particle moves closer to the other particle, (into a stronger second gradient), the increased proximity affects the the orders of magnitude in the series respectively and the tilt of gradient increases.

We might think the applied field from the nearby particle would alter the vector components in our particle as a one-time change and that would be it, since it is a superposition, (addition) of the two functions. But we will remember that the center of the donut was canceled to zero in z as a constant feed of state-data propagation meeting equally in z from the right and left. The diffusion force in spacetime is continuous, (it continuously tends to the lowest energy trajectory). In a periodic geometric configuration, the "lowest energy direction" means to dynamically always point in the direction of that geometry, (again, as as stable configuration preferable to the maximally random state). So once the field state tips the z component, like tipping an ever-full basin of water, the imbalance of symmetry will continue to increase with proximity.



We will study this propagation process step by step in detail but it is important to have an overview to begin with.

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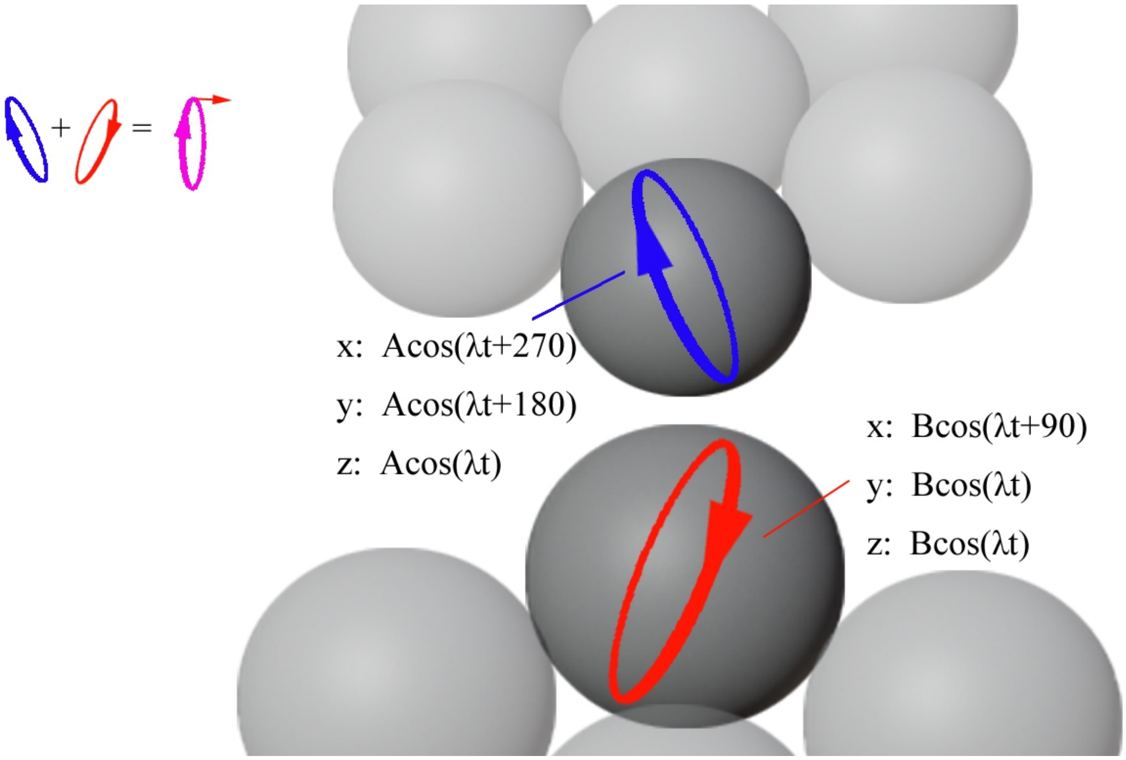
We will pause, zoom out and reiterate what is going on with our velocity vectors in spacetime. The xyz cos function for our particle-like fixed-period is just the observable component of the otherwise random velocity and acceleration directions of the Q of spacetime. When we talk about “rotation direction” of a toroid particle, we are, of course ultimately talking about simple cos(λt) functions, one for each spacial direction.

The value of of the velocity vector just oscillates between -1 and 1 in each spacial direction. Since our fixed-period component we define as the observable is always, together with a random component, the probability amplitude associated with the fixed-period observable is based on distance from the particle, (again, due to proximity of superposition with Q that are synchronized).

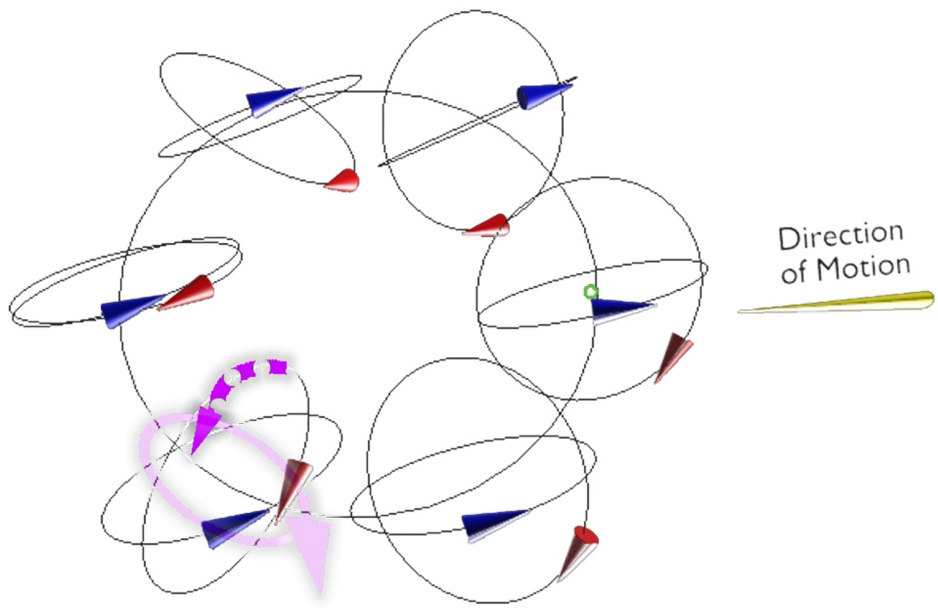
The notion of specific rotation-direction of the observable implies that the resultant true velocity vector in spacetime, (at that point) will have a certain probability of conforming to the rotation direction of the ideal toroid periodic function. “Constructive” rotation directions (that increase each other’s probability amplitude in that rotation direction) will have phases that fall within a certain arc of each other and outside that arc they would be considered destructive to the rotation-direction. This will be important to keep in mind when we talk about the continual rotations that opposite handed (charge) systems will superpose on one another.

The 2d plane in 3d space where we might draw a circle for an angular motion, has a rotation direction mathematically written by three periodic functions one for x,y and z and the particular orientation of that plane in space will be described by a particular phase-shift-relationship between the x,y and z sinusoidal functions, (i.e. cos(λt+?). For a specific rotation direction for instance, where each component oscillates between vector values of 1 and -1, x might be at 0 while y is at 1 and z is at 1, (x has a phase shift of pi/2 in the “?” place and both x and y have a phase shift of zero). To reverse the rotation direction on the same plane, z would have a phase shift of 3pi/2.

When analyzing the effects of two toroid spinor systems superimposed, it will be useful to think of the rotation directions of their Q as increasing the PA of one anothers’ rotation direction or decreasing it, based on the sum of their amplitudes via opposing the rotation direction (destructively) or being the same rotation direction, (constructively). The details of what constitutes constructive and destructive phase relationships will be detailed in a later section, having to do with the magnitude of the derivatives of the functions, (e.g destructive loop directions reduce the gradient-reduction capacity of the structure, and the differential equation dictates that the particle will always rotate to the lowest energy direction, i.e. away from the opposing loop directions causing particle rotations). Analyzing the results of the sums of individual cos functions without the specifics becomes unwieldy for the visualization.

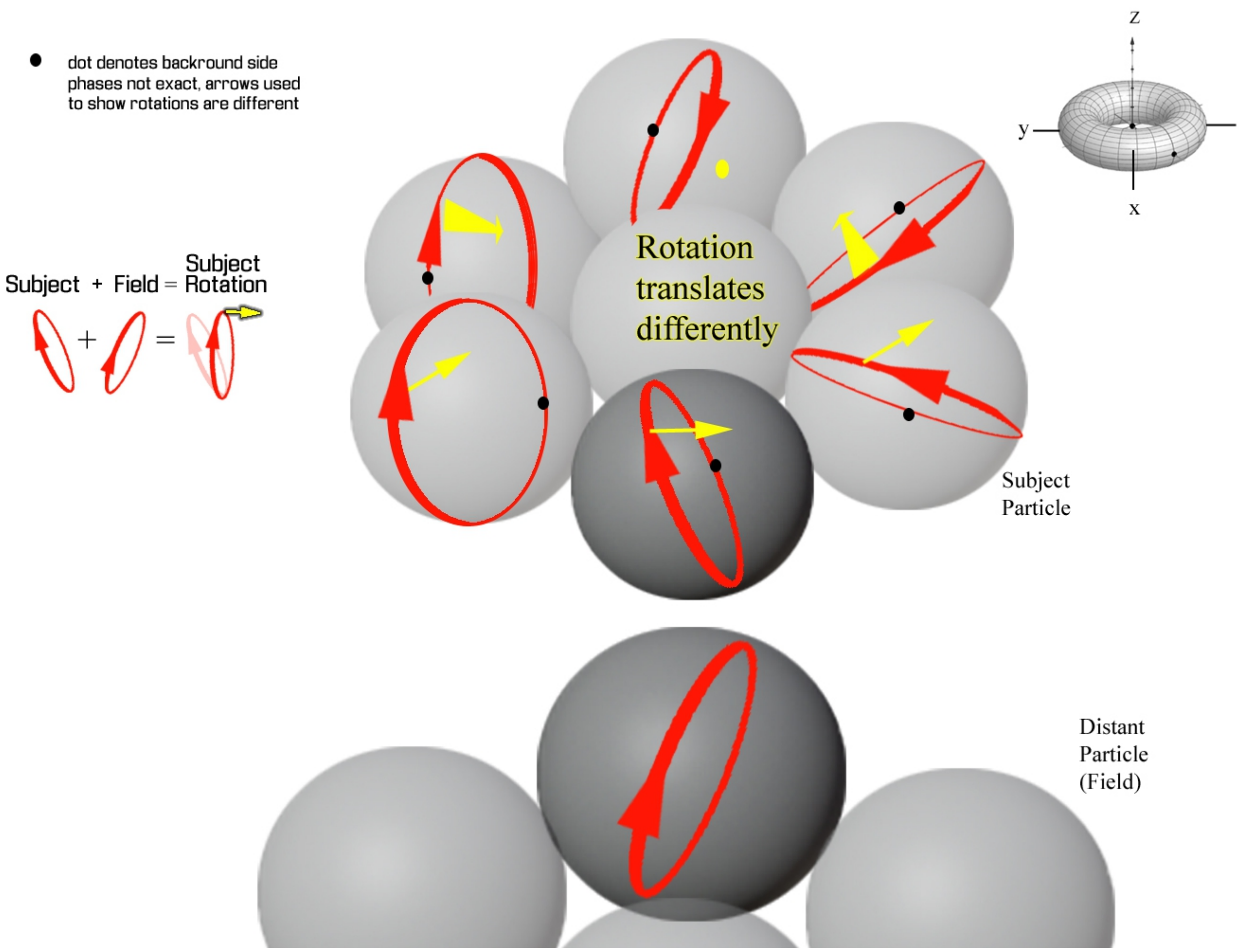


Again, the same single closest-side Q state of the distant particle will be superimposed on all the different Q states of our subject particle, around the full spin ½ around its entire 360, (remembering that our equal/opposite z vector phase varies based on location around the primary axis). If we imagine two adjacent toroids as clocks laying flat, the the 11:30 to12:30 to region of the distant clock would superpose with all the regions 1:00, 2:00, 3:00 etc of the entire clock of the local particle, since the distant particle data spreads out radially and the local particle fits into just a narrow arc of its radiated state. This means that a single Q state from the distant particle will superimpose differently on all the different z vector states of the Q around the subject particle.



We know the toroid system exists stably because its geometry maximizes the frictionless fluid-mechanics-esque action of diffusion, which connects all the “moving parts” in the array of Q regions, (satisfying the heat equation differential relationship). So when a superimposed state rotates the nearest Q, and the toroid system is already at dynamic equilibrium with the other Q around the primary axis, the that rotation will “push” those other Q in a direction that corresponds to the phase difference they had with each other at equilibrium. So when handed particles result in disproportionate superpositions, of one nearest-Q state from toroid 1 superposed with all states around toroid2, the disproportionate rotation (on only one side) will propagate around the entire particle to keep differential equilibrium, and they all rotate.

So like a right-angle gear configuration or a water hose turned at a 90 degree angle, the superposed data from the nearest Q in a particle toroid, superposed on a second particle, will exert a rotation force, (change to the second gradient) that will be as if it itself was rotated, as it propagates across the toroid system. Like pressure that enters a water hose traveling forward, but the hose bends to the right, that pressure will end up being expressed to the right, via the differential “structure” of the toroid.



In other words, a right-ward rotation in one place in the toroid might translate to a forward rotation in another part of the toroid and in this way the entire structure will have a compound rotation based on the superposition of its parts.

One might imagine a sphere that encapsulates the toroid and the direction of vector flow of the toroid to be 3d woodscrew threads that cover the surface of that sphere. Two toroids "in contact" would rotate each other's spheres in a unique way. In the process of threading through a full rotation back to the starting point, each sphere would turn en-over-end while it turned about its horizontal axis.

This phenomenon whereby a single z phase of a distant particle effects all the staggered z phases around a local particle causes the rotation induced between two fermion to be compound. The vector sum of the nearest Q in a distant particle and all the Q in a subject particle would end up with a rotation behavior where, for every complete 360 accomplished around the z (primary) toroid axis, only ½ a rotation would be accomplished around the x and the y (secondary) axes. So the subject toroid will have a rotation about its x and y axes applied simultaneously and continuously, regardless of its orientation but it would require a full 720 degrees of rotation for it to complete a circuit of its vector system orientation at any given point.

So we have a situation where the ½ of each toroid is induced to rotate by the other toroid (since some vector components are constructive to the second gradient amplitude and others are destructive) and the other half of the toroid is simply reduced in amplitude (PA) in all its vector components. The crude analogy could be two boats facing each other each having two outboard motors, one on the back, pushing forward and one on the front, pushing backward, resulting in each boat held stationary in its absolute rest state, the bow and stern propulsion canceling evenly. But when the two boats are near one another, and their propeller actions superpose, the rotation of the front-propellers on both bows cancel exactly, allowing the boats to move forward, but when the bow-propellor of boat1 superposes with the stern-propellor of boat2 (and vice versa), a rotation is induced, since one component still cancels.

We will use the outline of this metaphor for the study of the interaction between handed fermions using the term the “fore” side as shorthand for the leading Q in the direction of motion, either via attraction or repulsion), and “aft” for the trailing Q, (the side opposite the direction of motion). Obviously the aft side would be between the two particles if they are repelling (like handed) and on the outside of the two particles if they are attracting, (opposite handed).

On the fore side of two nearby particles, the two extremes of the vector states that will be superposed (spin-up and spin down) are either the same rotation direction in all x,y,z (all constructive), or opposite in all rotation direction (all destructive), constructive or destructive with a magnitude based on proximity. But again, this is only the case in a freeze frame analysis, where we can arbitrarily orient the particles up or down. In reality they will already have been in a phase relationship and the overall particle rotation puts the fore sides half way between gradient-constructive and destructive orientations and so the fore sides will be effectively be neutral. It will be the aft sides where we see the action of propagation and rotation taking place in the superposition.

On the aft side (the direction a particle moves away from, in either attraction or repulsion propagation), we again have the ability to imagine the particles either up or down and we can imagine superposing them that way, but the reality of the differential relationship is a split difference. The two extremes of vector states that will be superimposed in two nearby particles (spin-up, spin down) see either
1. a constructive sum in the z,x plane of rotation with a destructive x,y rotation direction, (i.e. when the x or y cos phase has its phase flipped 180) or
2. a constructive x,y rotation direction and a destructive z,x rotation direction.

They continue to rotate because when we add together the vectors that each particle presents, (where they face each other), we of course get the angle of lowest energy path between them as the new state for both particles at that location (a rotation about the y axis for example). Like the carrot and the donkey, this structure constantly keeps the angles that are “fed” new superposition states that perpetually cause new lowest-energy rotations and so are held held in a continuous rotate condition.

A more apt analogy would be the a/c signal in a motor and the alternating configuration of the windings built around the shaft. As the positive current of the power turns to negative current in the signal, the placement of the reversal of windings is timed accordingly so that a constant electromagnetic force is applied to rotate the shaft, even though the signal (direction of flow) oscillates +-. In the case of the spinor, the "reversed windings" are the result of the toroid shape, such that mutually rotating particles will simultaneously mutually rotate their 3d "polarities", (vectors of acceleration associated with rotation direction in the toroid).

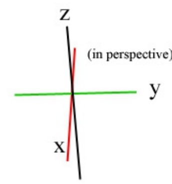
If we take the superposition of states dt by dt, and remember how all the Q in and around the structured Q of the particle are always propagating their states at c (looped-back in a rest-structure-reciprocation or not), we can then put together the scene and observe how propagation and rotation take place from the same effect of the superposition, and in a way that stretches the structure out in the direction of motion, with different duplicated "versions" of the particle as the "tipped" second gradient causes the symmetry to shift forward overlapping its old perimeter and leaving behind its old center progressively as growth becomes motion. The result is the blurry observable quantum wavestates and their characteristic Fourier transforms.

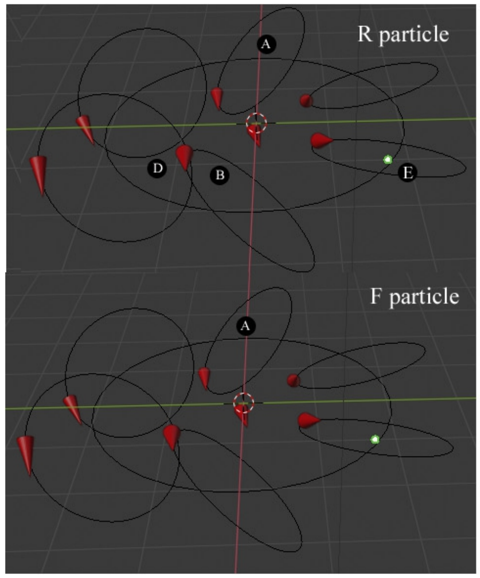
The circumstance of "particles-in-vicinity" is an infinitely compound phase relationship that is simultaneously existing between all particles in the universe that first "began the superimposition", at an infinitesimally short time before/during/after the big bang, but for easier conceptualization, we will set the stage for a not-actually-possible t=0 situation where we can see how a rest mass particle begins to gain kinetic energy from an initial absolute rest state that then overlaps with another fermion. Absolute rest geometries, do not exist naturally because two particles won't be found in isolation. But we will pretend we are those aliens from the previous analogy, taking apart the pickup truck WITHOUT any dirt on it.

When the first Q of a toroid rest particle encounters the Q state that has traveled from the nearest Q in a distance particle, the rest particle is influenced by the acceleration that data represents and the acceleration commences. Although the reference rest-fermion (abbreviated hereafter as R) that we will use as our subject particle, with future equations being written to describe the state of particle R at points x,y,z,t , as such, is continuously "superposing" with the random states surrounding it. When it encounters the acceleration state from a neighboring particle (abbreviated as F for field), it finds that its pattern of acceleration is not entirely random, just like R is and thus consistently constructive or destructive in some manner, to its acceleration structure. The new incoming state data from F is constructive and/or partially destructive, in its oscillation of vector directions, since it has the same fixed-period underlying differential structure the rest particle does, (being both from the same species of toroid geometry).

Same Charge

The Q "A" of particle F, (at any proximity not ->0) will be the only state superposed on particle R





Q "A" will superpose differently with the Q around particle R, (including B, D, E and the A position of R).

The rotations induced in these different Q will result in a whole-particle compound rotation.

The constructive or destructive effects of the sum, (superposition) at t=1 affect a rotation at the first encountered Q of the R toroid, and in the case that F is a like-handed particle, (making that initial Q the aft side of R), the z,x component is constructive in the superposition but the x,y is destructive, rotating the loop in 3d space. So a zx second gradient of the periodic function that is greater than the rest value will be found at that initial Q in the rest particle R.

But that initial Q is bordering the center Q, where the primary axis is, and since it is constantly propagating state data to that center, it will now propagate a z component to the center that is out of balance with the Q on the opposite side of its center, (what will be the fore-side of this particle, i.e. the direction it will travel when the particles repel). Again, in the pure rest state, the z components cancel to zero in the center Q, (being opposite phases, as a product of satisfaction of diffusion about the secondary axis). The center Q has an x,y component that is in consistent phase throughout the entire toroid, (being a product of the satisfaction of diffusion around the primary axis).

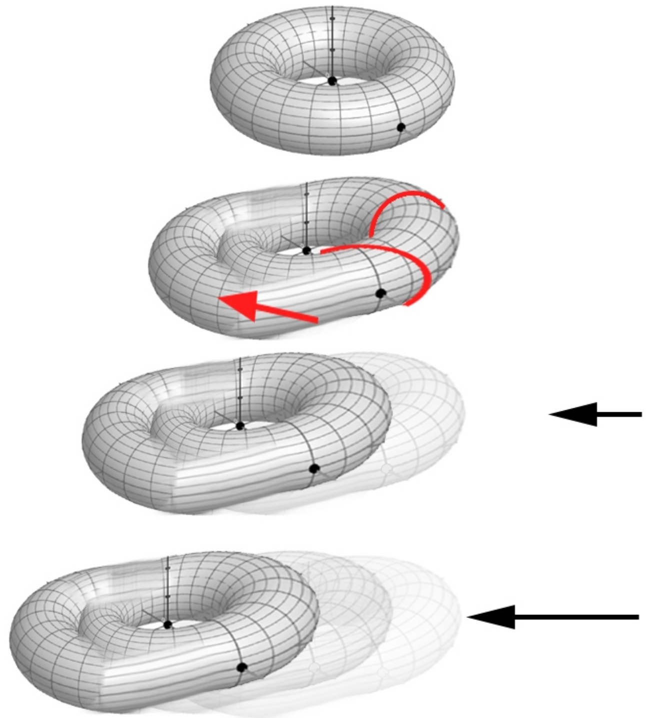
At t=2 that initial Q of the R continues to receive state data from F and so continues to rotate, with each new state received increasing rotation direction in the z and decreasing in the x,y. The center Q of the toroid has now received the new z component data that is slightly rotated (having the greater z and less x,y rotation flow), and the entire structure begins to re-compute its differential equilibrium.

At t=3 The fore side of the rest particle R now receives the imbalanced larger z,x component from the center (which is now no longer zero), which it finds to be slightly destructive to its rotation direction in the zx plane, effectively shifting the "center Q" to fractionally exist in both the original "center Q" and now also in that fore-side in a small amount equal to the intensity of the overlapped F particle (the magnitude of the second gradient superposed). The center Q receives the new data from the aft Q, which is a little more rotated now, and making the center Q even more non-zero. The aft Q receives more state data from F and so is rotated a third time-slice.

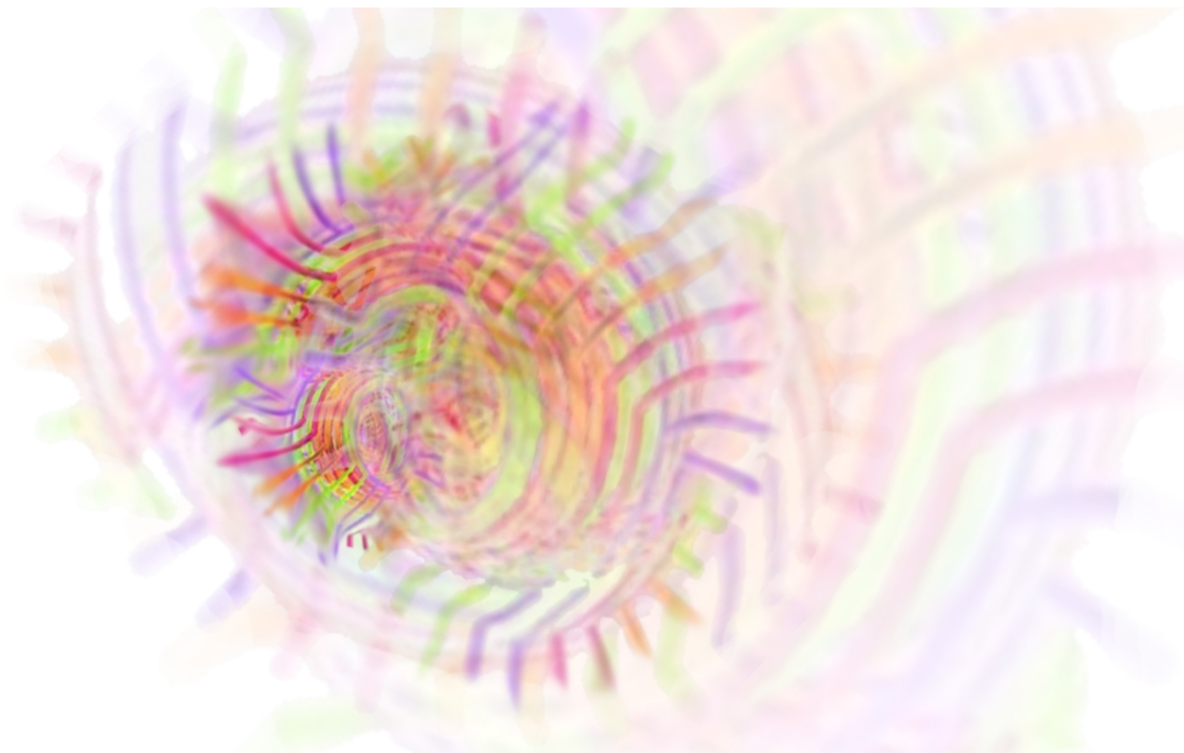
We might note that the center Q of the symmetry is displaced at a rate dictated by the magnitude of the second gradient superposed. But we also see that that displacement results in being closer to F and so the gradient then increases, indicating a particular variety of acceleration taking place.

At t=4 the center now receives back the propagated state data from the fore and aft sides which are both more imbalanced than they were at t=2. Since the "feed" of toroid state data from the distant particle F is continuous, this imbalance will continue to grow. This dynamic represents a "growth" characteristic of the function that is a continually compounding exponential, (although here we are stepping (t) in discrete increments for the purpose of analysis).

Like the diminished trough that is followed by a raised crest in a water wave, the propagating spiraling toroid geometry is second gradient amplitude-squashed toward the fore side, in the direction of motion and inflated on the aft side, both sides connected by the action of diffusion, as it spirals 180 from one to the other. The more the aft side is increased in z, the more the fore side is decreased directly next to the "center Q" and increased just beyond it in the direction of motion as the spiral path around the tangent delivers a stretched symmetry around and forward, in motion as the equilibrium chases itself.

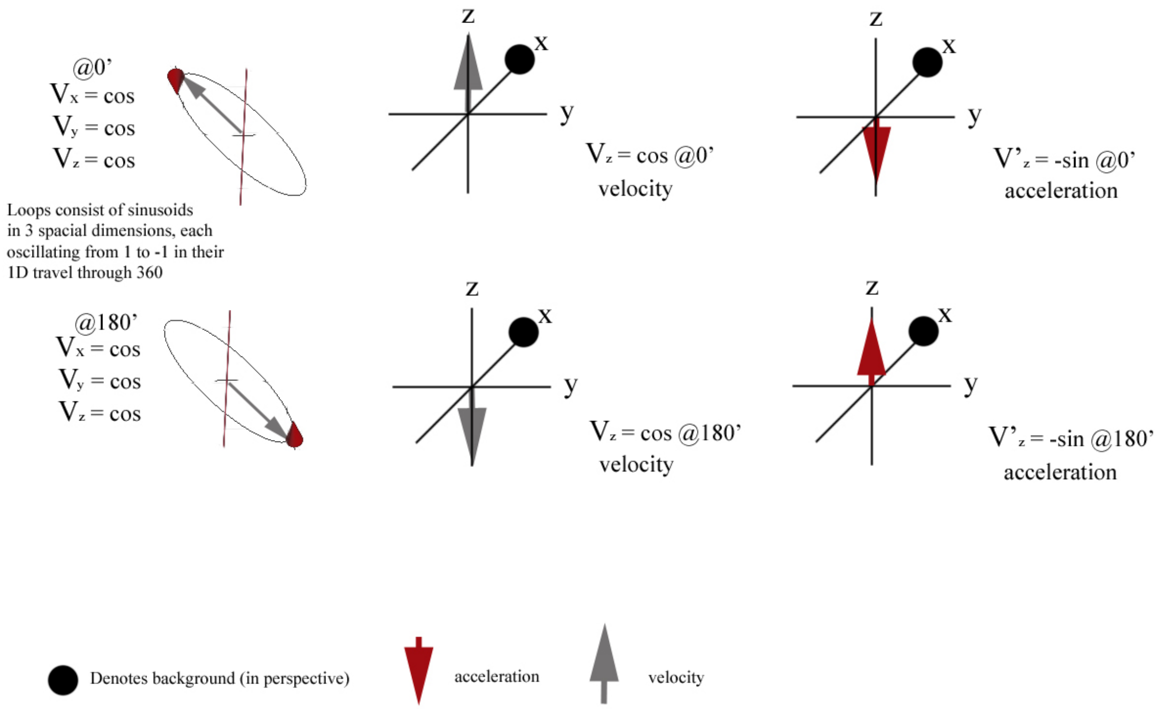


This "stretched" symmetry being the product of the old rest "zero" region at the primary axis having grown its z component to gradually become the new toroid location, the moving particle existing as both old and new with superposed structures. The net result at the core is the average of their two probability amplitudes, more stretched out in footprint "versions", as more momentum is gained. Rotation states will be layered radially, progressively as they have propagated a record of their states chronologically, outward radially, with a frequency and momentum progression like rings on a tree, along with the intensity falloff of PA radially.



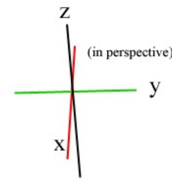
As another analogy, (to highlight the symmetry-breaking tendency to displace the whole), if we add a straight vector of wind to the the symmetrical circular vectors of air current in a tornado, it would push the tornado sideways but this is not necessarily straightforward. From aerial view, we would see the circumference of the tornado virtually elongated, as the straight wind force and the structure of the vectors of wind force traveling tangentially around the vortex merge into resultant vectors that move laterally at the same time as circularly. The vectors of the torus, superposed with the vectors of a distant torus are doing the same thing, but in a compound (spinor) manner, due to both particles being symmetries that satisfy a compound dark-energy pressure gradient.

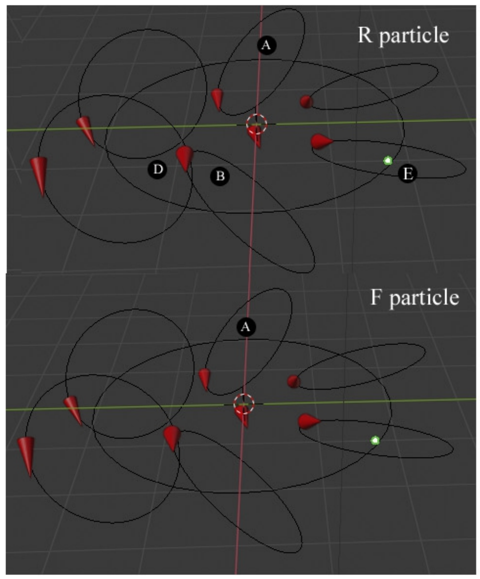
The tornado is a vortex satisfying a 1-D vertical pressure differential with a 2-D structure, the toroid is satisfying a 2-D radial pressure differential with a 3-D structure. In the case of bosons and fermions, that pressure gradient is simply the product of the synchronicity of direction of flow of what is otherwise an ambient pressure condensate of random accelerations of dark energy trying to point to minimum acceleration. The existence of the mechanics of observable particles and their virtually infinite sustainability being reminiscent of “perpetual motion machines”, is an unavoidable fact. The condensate of force provided by dark energy, (1D time) diffusing in 3D space is, in fact, evidently perpetual and so matter and its forces are sustained.



Same Charge

The Q "A" of particle F, (at any proximity not ->0) will be the only state superposed on particle R



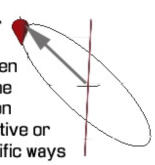


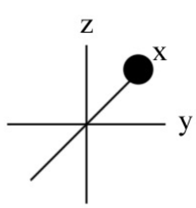
Q "A" will superpose differently with the Q around particle R, (including B, D, E and the A position of R).

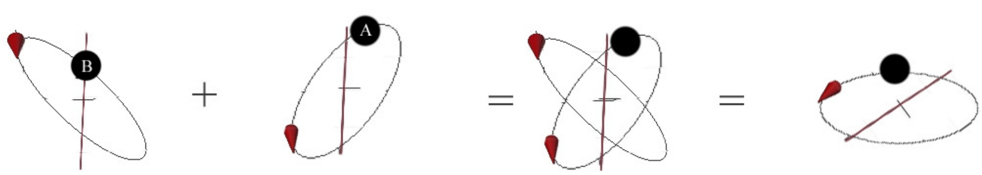
The rotations induced in these different Q will result in a whole-particle compound rotation.

If we consider the effects of the superposition of F with each of the Q around the circumference of the primary axis, instead of through the center, we can observe its varied rotational effect.

The velocity vector of a Q has a vector of acceleration. When two Q superpose, the periodic acceleration paths are constructive or destructive in specific ways



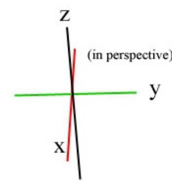


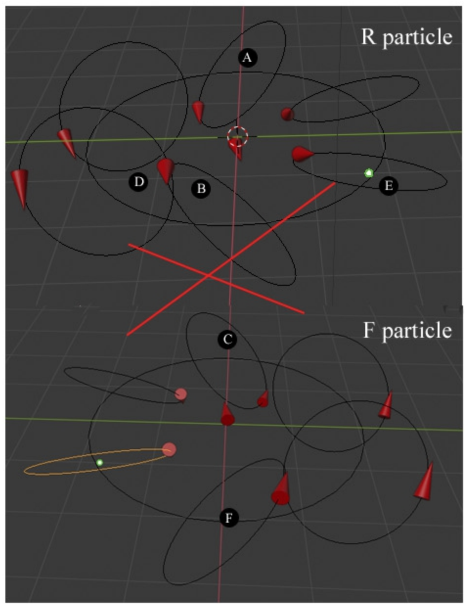


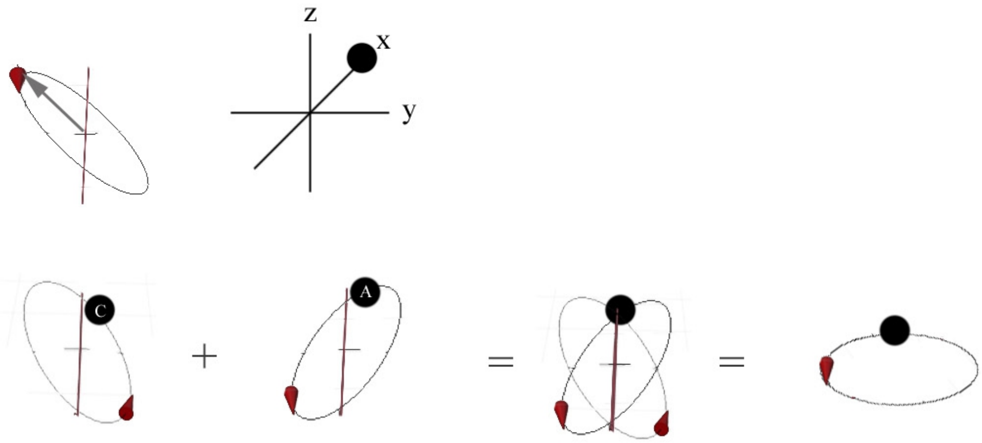
● Denotes background (in perspective)

We only need to notice that all the Q around the primary axis of R (around the donut) are each altered in a different way by the limited arc that superposes with them from the toroid F.

Opposite Charge



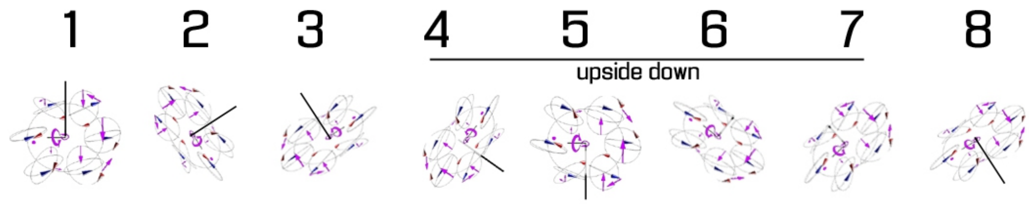




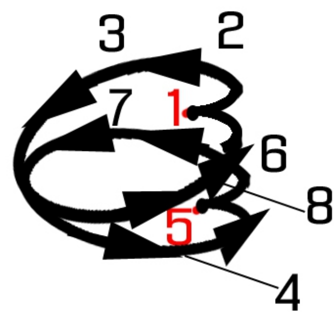
Denotes background (in perspective)

https://subspaceinstitute.com/images/0/10852277/loopsuperposition.mp4

In loop paths with the red cones, we see the subject particle R and in blue, the state from the foremost Q of the nearby particle F, superposed. Since the superposed state from F is the same throughout the different Q states of R, the result of the superposition is different depending on the position in R. Since F's state is superposed on R and R's state is superposed on F, their unique symmetries present a rotation to both that are continuous.



Oscillation With an Opposite Charge



If we track the motion of the rest structure, and consider the handed orientation of the vectors of velocity, we get a handed potential in the fabric of spacetime that is the path of lowest gradient of velocity c and moves through 720 degrees to complete its circuit. With a tracer we can see the path the rest structure takes through space.

https://subspaceinstutute.com/images/0/10851854/electronpositrontracer.mp4

Lets reiterate and then zoom back out to some context. We found that because of the geometry of their handedness and primary/secondary axis configuration, the two toroids in proximity will have a constant direction of rotation induced about the axis radial between them (i.e. line of sight). The timing of the cos functions in x, y and z in both structures amount to a direction of lowest-energy diffusion-rotation. When those "loops of diffusion", for a toroid superimpose, there are certain Q within the complete 360 around the primary axis that cancel with each other, (reduced second gradient) and certain vectors that reinforce each other's loop direction, (increasing second gradient).

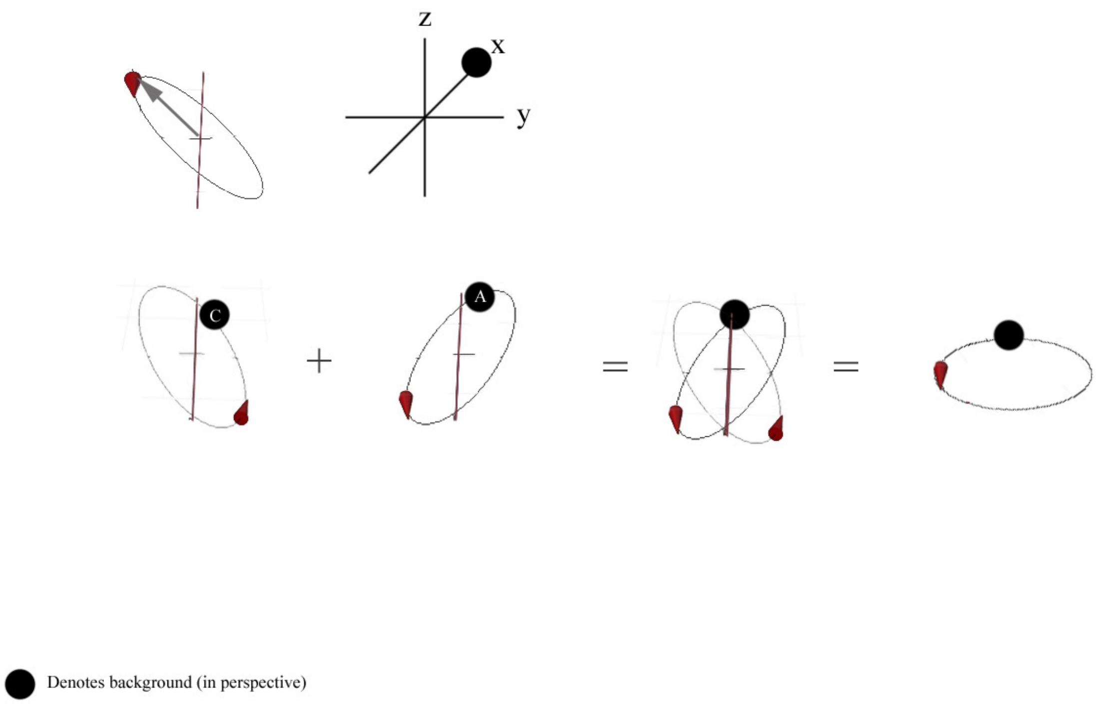
Stated differently, any two Q fixed-period loop states superimposed at one Q location will either enhance or reduce the probability that the random-direction velocity vector of the dark energy at that point will conform to the fixed-period velocity direction. This constructive or destructive fixed-period interference is based on the timing of the phases of the x,yz, components of the two Q, and where the lowest energy path exists, (where the gradient is minimized). Literally if one has a phase timing looping the opposite direction, it will be a destructive interference and vice versa.

In a later section when we explain the formula for these function elements, we will notice that any number of adjacent particles, the remnants of particles, (as photons), and the forces acting between them will be described by adding the phases for each x y and z component for the toroids involved, to determine what rotation the superposition represents. Some components may clash, (increasing the gradient), some may compliment, but regardless, the differential will dictate a new lowest-gradient plane of rotation when they superpose. The differential vector algebra per se may be excessively detailed, but luckily the geometries involved make the interactions visually accessible.

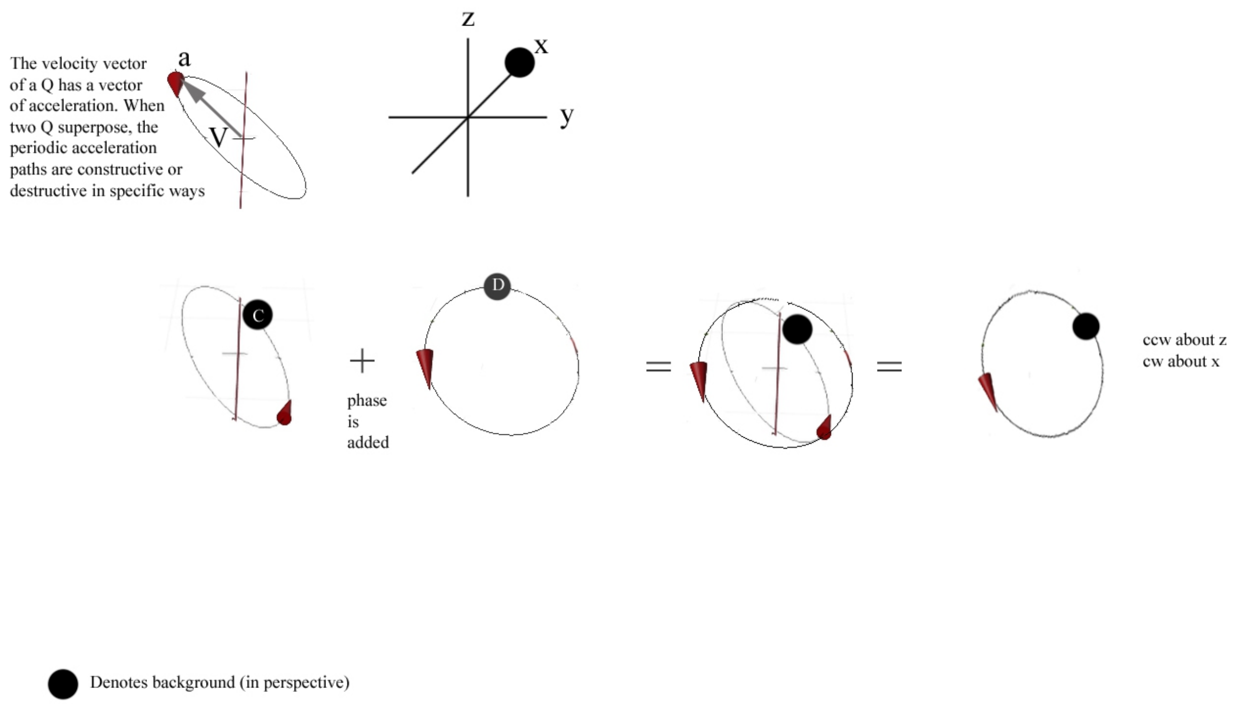
So the new resultant loop path in a Q is a rotation of what that Q periodic path was, before the sum. The sum of an R loop with an F loop makes a combined new path that rotates that Q. That single rotated Q, in the sustainable geometry of the toroid, then effectively "pushes" the differential dynamic of the entire geometry causing the whole toroid gradient geometry to rotate with it. More precisely, as it propagates to them, the neighboring Q reflect that altered path in the average of neighboring-states that is their new state, (as the heat equation in that Q changes and a new best-rotation direction is assumed). Unless the new change is 100% opposite (180 degrees) and with equal amplitude, (annihilation conditions), the altered gradient will be a rotation that will be propagated on through the entire structure as a sustainable rotation. Ultimately all opposite charged fermion interactions are destined for annihilation, as we know.

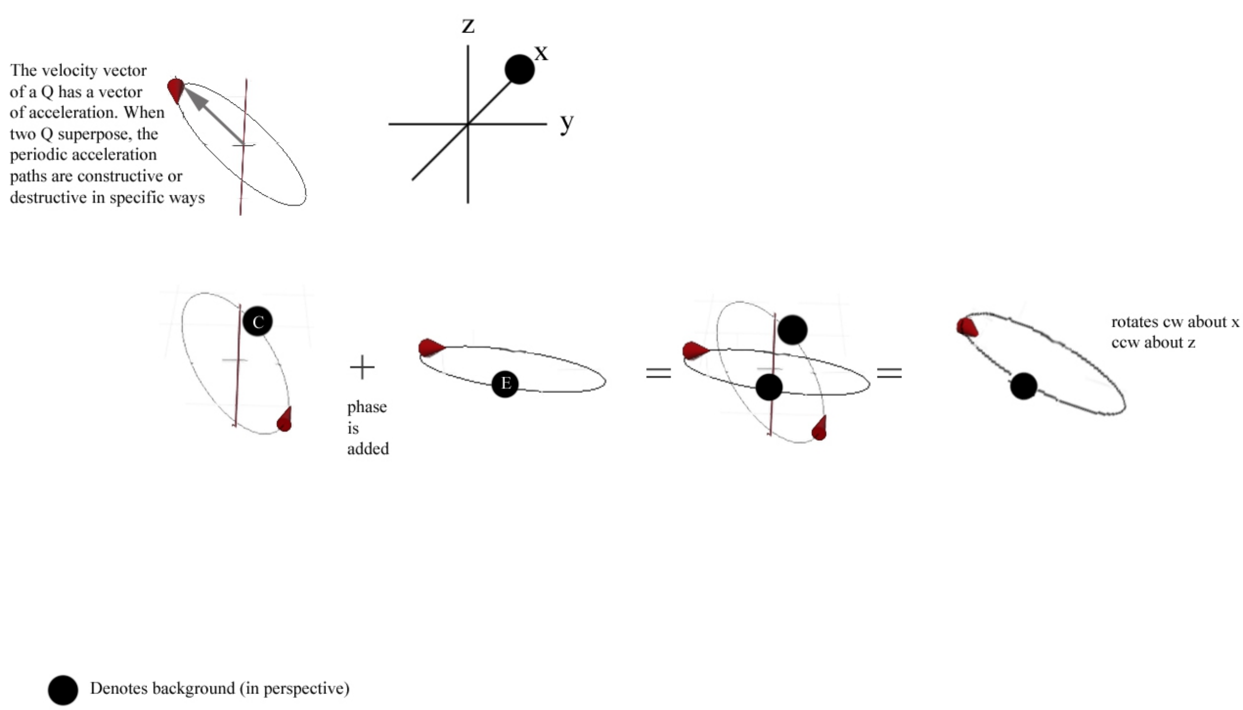
The push of gradient, again, in greater detail, is the result of spacetime trajectories preferring the new path of least conflict, which is the essence of the existence of the periodic path's structural sustainability. The annihilation condition represents a superposition where the two periodics are 100% opposed trajectory and leaves no fixed-period "minimized trajectory-conflict" state remaining in the Q of the structures. We will examine the annihilation conditions in detail later.

It so happens that the same "lop sided" z component that causes the primary axis Q in the center to begin propagating in attraction or repulsion, also causes different superposition conditions on the fore and aft sides of both R and F, and hence those sides of the Q symmetry experience different rotation conditions. In fact, the fore side of each experience no direct-rotation from the superposition, since the imposed loop direction on that side is exactly opposite-and-parallel to the loop direction of the fore side of R. Remembering that F is at some distance and so its amplitude will be smaller than R in the sum, so the effect is just F's influence oscillating between reducing and enhancing the amplitude of all three vector directions x,y,z in the fore side of R, with no rotation and zero net effect on average , on the fore side.



On the aft side of R however, the planes of the superposed loop directions are 90 degrees turned from one another, yet one more trait of the spinor geometry that has profound effect. The aft Q in R does therefore rotate, and take the entire toroid rotating with it. The Q directly to the left and right of the aft Q also rotate, but since their z components are 60 degrees advanced and retarded from the aft, the rotation caused by the one F state (again, being the same state all Q in R are subjected to) have different effects for the right and for the left.





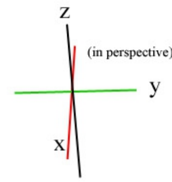
Both R and F particles, (as a whole) are induced to rotate in the same changing direction pattern, mirrored against their common radial axis. The consistent rotating rotation direction the particles both maintain around their line of sight are specifically the result of their secondary axes changing orientation. As the superposition results in a new rotated position, that new position in both particles comprise a new superposition that has the same relative vector difference, and so the next superposition sum results in a second rotation, and so on.

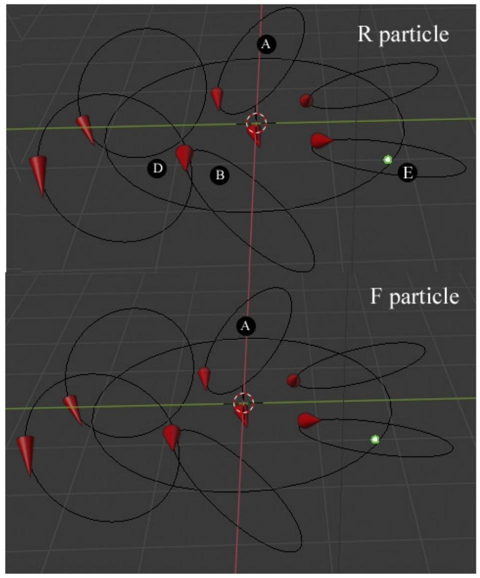
https://subspaceinstitute.com/images/0/10852301/positronelectronrotation.mp4

In the animation of opposite-handed particles, the inner (fore) rest-acceleration direction arrow always forms the same acute angle with the outer (aft) rest direction arrow, no matter where they are in their overall rotation. The superposition of these two vectors will yield the new vector for the aft Q of each particle, and the change in that vector will induce the rotation direction in that particle. It can also be noted that both of the inner (fore) angles are always the same and therefore do not induce a rotation in and of themselves.

Same Charge

The Q "A" of particle F, (at any proximity not ->0) will be the only state superposed on particle R



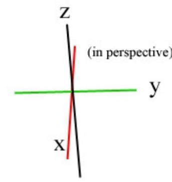


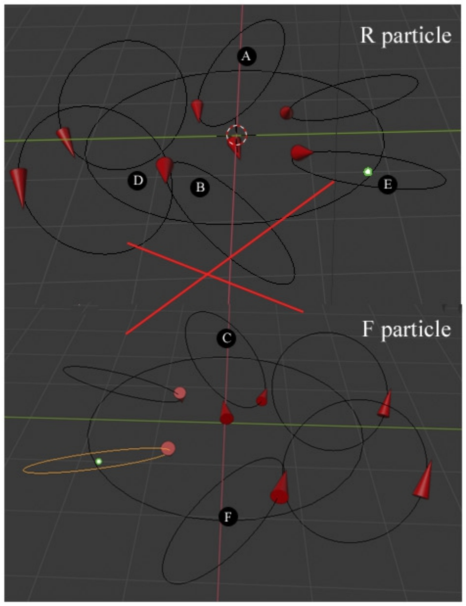
Q "A" will superpose differently with the Q around particle R, (including B, D, E and the A position of R).

The rotations induced in these different Q will result in a whole-particle compound rotation.

We notice that with two like charges, the two nearest sides, (i.e. aft-to-aft sides, B and A in above diagram) together assume the same resultant superposition, as do the far sides with the other's near side, (i.e. aft-to-fore, C and A in diagram below) in opposite charged particles.

Opposite Charge





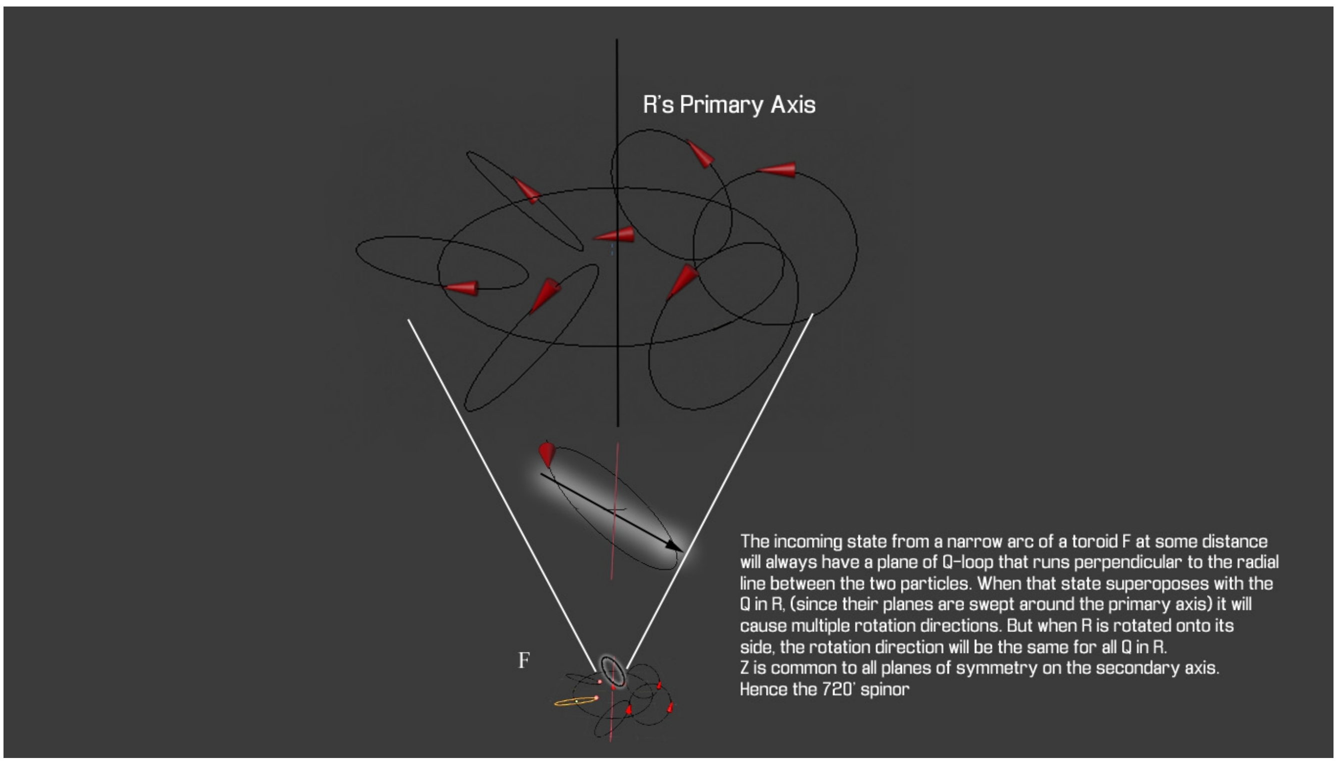
This superposition state is the important "z-tipping" state that creates the vector of third gradient across the center (primary axis) and causes the rotation, (of course it requires the disproportion of both side's states for the effect but this one is conspicuous in its action). It acts to begin symmetry-broken propagation toward that direction across the toroid, so when it occurs on the near-side superpositions, they propagate away from one another, when it results on the far sides, they propagate toward one another.

It should be noted that although the loop directions in the superpositions for the "propulsion-sides" are the same in both like and opposite combinations, the overall phase is opposite in the like-like. This means that in an opposite charged pair, the propulsion superposition causes their particles as a whole to both rotate the same absolute direction in space, but in a like charged pair, they will rotate each particle as a whole in absolute opposite directions in space.

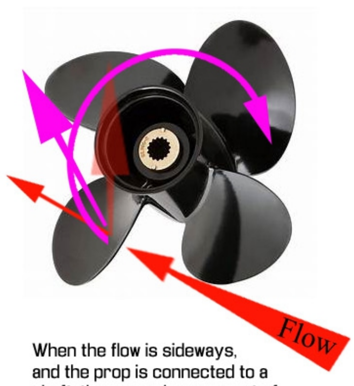
In the most notoriously "spinor" behavior we can see the particle's z axis being turned 180 degrees , "upside down" (spin-up, spin down) as occurring over the course of the other two axes (x and y) being each turned 90 degrees. This phenomenon is the geometrical result of the narrow arc (single Q) state of a particle F being superposed with all the Q around the primary axis of R.

Since the primary axis of R is perpendicular to the (radial) line of sight between particles, the single Q loop-plane of F will be at a 45 degree angle to the primary axis of R. This means that any and all rotations that will be induced in R will be about the axis that is radial between the two particles, (regardless of the orientation of the toroid). That is not saying the overall particle will only turn about that radial axis. The propeller of an outboard has a shaft that turns on a fixed axis but that motion is converted by the geometry of the blade so that a component pushes parallel to the shaft rotation.

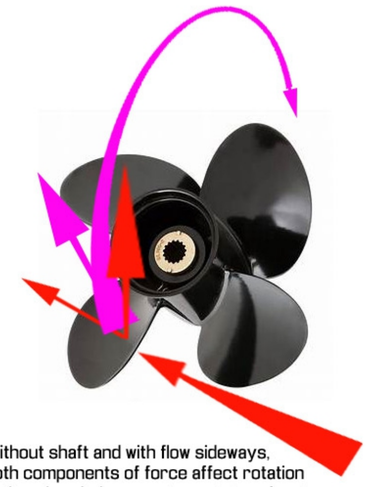
Although the Q state that reaches R will always have a loop plane that is diagonal through the radial axis between particles, it superposes with all the Q in R, which have similar diagonals perpendicular to the primary axis, but phase-shifted around the array symmetrical about R's primary axis. Since all the loops of the secondary axis that are superposed are in the z,x or z,y direction, rotation about z will be the rate of rotation about x or y).



As the whole orientation of the toroid is rotated in that compound manner, R's primary axis shifts close to parallel with the radial axis between them and during that orientation, the rotations on a plane perpendicular to the radial axis will only affect rotations about R's primary axis (not compound, since in that orientation it does not apply to two planes and hence does not split its increment of rotation between two components). The toroid therefore is rotated through 720 degrees about its primary axis (z) for every 360 through the axis perpendicular to it (x,y).



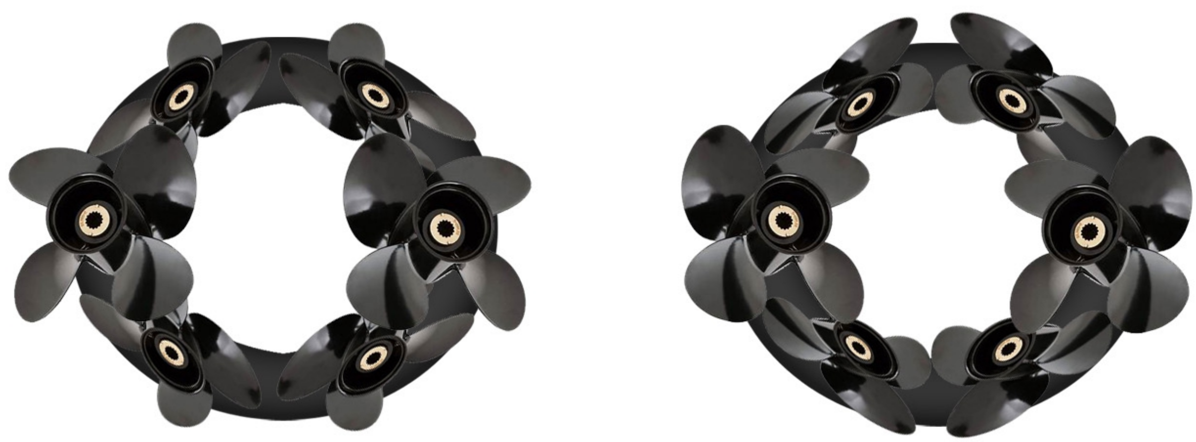
When the flow is sideways, and the prop is connected to a shaft, the second component of force is held fixed



Without shaft and with flow sideways, both components of force affect rotation and so the whole geometry rotates about two axes

The non-spinor analogy would be a wind that blows into a propeller straight-on, (only affecting a rotation in a single plane, around its main axis), but if a wind blew sideways to a propeller (we could imagine it is not fixed to a shaft), the wind would rotate the propeller in two planes, about its main axis and about the direction of the wind, although the analogy would only hold for a small arc of rotation, (since a propeller can't maintain that initial symmetry around its full geometry). Without shaft, we would observe the force of the wind split between rotating the propeller about its hub axis and about the axis of the direction of the wind, (wind is shown here striking back side of propeller for vector illustrative purposes).

The spinor in a field is just a version of this same dynamic, and its spherical distribution of this compound-handed propeller-like geometry can maintain the same relationship of geometry through its complete circuit. When the whole toroid is oriented "on its side" during its rotation (viewing through the donut hole to particle F), the rotational force is applied as it would face-on to a propeller, rotating only around the primary axis. When it is back oriented "laying down" it would again rotate on two axes, (compound). Although over-straining the analogy, to understand the compound nature, we might imagine a ring of propellers that are left-handed on one side of the ring and right-handed on the other but somehow smoothly transitioning from right to left handed as you go around the ring, (accomplished in the spinor by the 60 degree angle difference between each Q plane as they go around the primary axis) . This is something that is only possible when the pressure dynamic d/dx is able to complete a 3d circuit in each Q region of spacetime, as the tendency to minimum acceleration in spacetime does.



The pressure configurations of more derivative, (comprised) macro geometries necessarily lose a degree of freedom, since macro geometries are made of combinations of these more fundamental sustainable spinor geometries.
This is similar to a cv-joint in an automobile axle requiring a third degree of freedom in the mechanism to translate forces acting on a single axis, though a third dimension. The Q of spacetime allow an effective "extra dimension", (or force-qualifier that is arbitrary to the fixed 3 spacial dimensions) by way of a 3d vector of force seeking the lowest conflict trajectory with its neighbor. In this way the randomly planar satisfactions of diffusion can be assembled sustainably in macro geometries. Again, this dynamic being a necessity for distinctive, "foreground" aspects to be sustained within an otherwise indistinct, random, (ultimately singular) phenomenon of velocity @c.

This action of fermion-fermion acceleration/rotations being introduced into the diffusion-engine differential geometry of the toroid structure, and sustained, with that momentum (angular and linear), again seemingly being "stored", are the basis for the conservation of momentum. If F suddenly disappeared, the growth of the rotation and propagation superposition relationship between R and F that is a result of their mutual rotation and propagation would also stop, (as represented by the (t) variable scalar in the phase of F in the formula ceasing to increment), but the rotation and linear propagation structure up to that point would remain perpetuated as energy in asymmetrical aspects of the structure, having been added to the symmetrical geometry and sustained by the general action to diffuse in dark energy.

Since phenomena that would be considered "losses" in classical physics (e.g. friction etc), are subsequent wave-interactions between these periodic particles, the force dynamics that govern periodic particles themselves are not subject to wave-phenomena losses. So like a wobble introduced into the dynamic of a gyroscope that is not subject to losses, the "blips" of Q rotation within the overall toroid geometry become part of their sustainable structure as beat harmonics in the differential equation for the vector system.

End of Section
7