The Natural Philosophy of Universal Matter

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1 Preface

When we consider the many things of the universe, we find they are all comprised of some sort of matter: Some of it is fairly well understood but some remain a mystery. From large sized things, such as galaxies, stars, and black holes, to medium sized things, such as planets, moons, and comets, and then to small sized things, such as atoms, quarks, and quantum matter. However some things, such as dark energy and dark matter remain a mystery.

Large objects are composed of smaller sets of matter. As we look more deeply into things, we find that galaxies are comprised of star systems, star systems may have planets, our planet has people, people have organs, organs are made of cells, cells are made of molecules, molecules are made of elements, and elements are made of smaller atomic particles. Each level of decomposition flows from larger to smaller particle levels and each resulting level seems to be made up of smaller discreet pieces. Imagine that we have some ‘super-knife’ that is able to separate larger things into their ever smaller, discreet smaller objects. Decomposition, then, is the methodical identification of, dissection, and separation of these discrete sets of matter.

Decomposition continues until all groups, at some point, are reduced to single, discrete particles. These discrete particles are not made up of smaller sets of matter and so ends the process of decomposition. These are particles of Universal Matter and we will label the set of all such particles as {f}.

All members of the set {f} constitute a field of such matter. This field is the whole Universe and all visible, known, and unknown things of this Universe are derived from compositions of {f}.

2 Basic Process

Members of {f} are irregular in shape, size, and are not evenly distributed within the field, that is the universe. Perturbations in the field and allows member particles of {f} to move and act independently of any or all other particles.

Any member particle of {f}, such as X, where X is in motion, may collide with another member particle of {f}, such as Y. The collision produces complex and simple results.

The complex result has two possible outcomes:

- One is that, due to the irregular shapes of the particles X and Y, the two particles may collide with each other and remain together, forming a composite particle, made up of two (or more members) of {f}. Also, the collision of X with Y may introduce rotation in the resulting composite particle; or
- The two particles X and Y may collide, separate, and so remain two discreet particles of {f}.

In either of these two outcomes, there is one additional, simple result of the collision:

- The collision may cause small pieces of either X and Y, or both, to break off from their parent particles. They become separate, individual pieces of X and/or Y. Such pieces may be labeled as ’sub-f’ particles. They retain properties of their parents and energy is transferred from the parent as a result of the collision.

  As newly formed sub-f particles of {f} are created they become member particle(s) in the set {f} and as such, fill-in the spaces in and around their parenting particles forming a localized influence on neighboring particles and other sub-f particles.

Particles of {f} collide with other particles and sub-f particles forming composite particles. The sole dimension of size allows collisions and possible joining of these particles resulting in new and/or larger composite particles. The collisions and joining of particles of {f}, sub-f particles, and/or composite particles imparts a second dimension, that of rotation, to the composite particles due to kinetic energy transferred in the interaction.

Note: The following discussion focuses on a direct path from individual particles of {f}to a hydrogen atom. This should in no way be construed to say this is all or everything that does come, or can come about. The types of particles by processes made or indeed the processes discussed herein are but a few (though critically important) of the myriad possibilities performed in nature.

3 Composite Particles

3.1 General

Composite particles accumulate in size and mass by collisions with other particle members of {f} and/or other composite particles. Sub-f particles accumulate within and around composite particle as they grow.

For the sake of clarity and discussion, we will set out three attained levels of composite particle (CP) growth:

- **Level I.** (CPL1) This is the initial growth phase in building a CP (composite particle). Individual members of {f} physically join together increasing the forming particle's size.
- **Level 2.** (CPL2) Here CPL1 particles join together. The key to growth in this second level is the relative sizes and direction of rotation of the colliding CPL1 particles. We see two types of growth in CPL2 interactions: series and quantitative.
- **Level 3.** (CPL3) Finally, we see the joining of the two types of the CPL2 particles forming CPL3 particles that combine both series and quantitative into hybrid particles.

3.2 Level 1 Accumulation

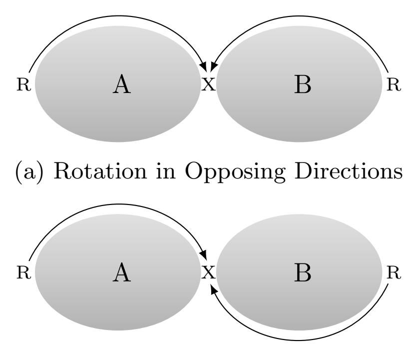
This level sees existing particles of {f} joining with other {f} particles (including sub-f particles) increasing the size and mass of the forming composite particle. After reaching sufficient size and mass[1] the accumulating group of particles attain CPL1 status and the focus of {f} particle accumulation shifts from gathering other particles of {f} to collisions with other CPL1 particles and so begin building CPL2 particles.

3.3 Level 2 Beginning Development

As a CPL2 particle begins forming, two types of particle growth emerge: Series and Quantitative. Given two CPL1 particles, say A and B, such that X collides with Y, two relationships determine the join:

- **Size**
  - Series joins find that A and B are similarly sized particles.
  - Quantitative joins find that one of the two particles, say A, is larger than B.
- **Direction of Rotation**
  - Series joins find A and B rotating in the opposite direction.
  - Quantitative joins find A and B rotating in the same direction.

The following discussion on series and quantitative joins will discuss particle rotation as it relates to a point of contact (or collision) between two particles. The direction of rotation is not absolute, rather it relates to the particle's rotation at the time of collision. At the point of contact, the respective particles may rotation in opposite directions, or the direction may be the same.



(a) Rotation in Opposing Directions

(b) Rotation in the Same Direction

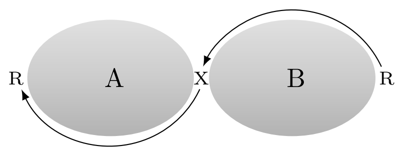
Figure 1: Rotational Directions at Point of Contact

Figure 1 illustrates effect of rotations at the point of contact 'X'. Figure 1a shows that the general opposing rotational directions of the two particles is, at the point of contact 'X', going in the same direction. Figure 1b shows that the opposite is true when the rotation of the two particles are the same. Here, at the point of contact 'X', the directions oppose each other.

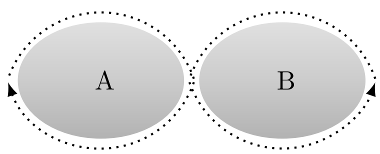
[1]See the Python coded report 'sizing_output.txt' in the On-Particle-Size folder (run from main.py).

3.3.1 Series Joins

Two CPL1 particles with opposing directions of rotation may begin forming a CPL2 particle. Figure 2a shows that their relative direction of rotation opposes each other but, at the point of contact 'X', both particles are rotating in a compatible direction. Series join results are most effective when the size of each composite particle is generally equal. The compatible direction of rotation, at the point of contact, allows A to find compatible receptor geography in B, and vice-versa, and so form a persistent series join relationship.



(a) Series Join Particle Rotations



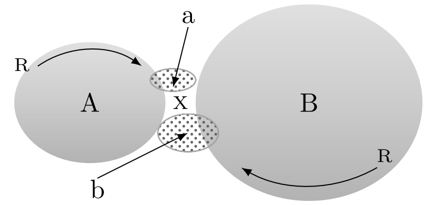
(b) Series Join Particle Exchange

Figure 2: Series Join

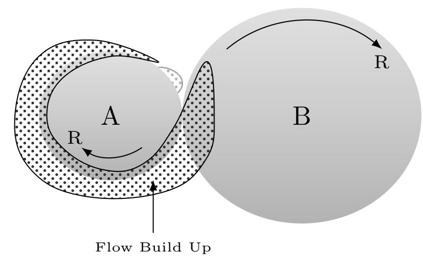
Figure 2b shows that, as A and B continue rotating against each other, the small {f} particle members of each CPL1 particle, which are initially rotating around each of their respective particles, peel off and get caught up in the other particle's rotation. The exchange of {f} particles continue and form an independent flow of particles held jointly by A and B. The flow of particles between and around A and B form a figure-eight pattern and serve to solidify the series join relationship.

3.3.2 Quantitative Joins

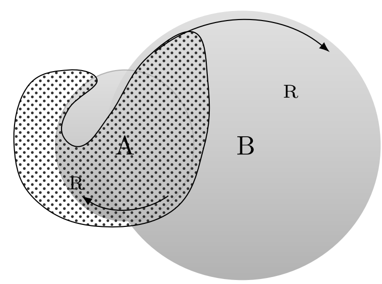
A and B, given their common direction of rotation, may begin forming a CPL2 quantitative particle. Though their relative direction of rotation is the same, at the point of contact they rotate in opposite directions. At the point of contact 'X', the contacting surfaces of A and B begin to pile up constituent members against each other. As illustrated in Figure 3a, A starts piling up at 'a' (above the contact point 'X') and B starts piling up at 'b' (below the contact point)



(a) Conflicting Rotation, Buildup Begins



(b) B Overflowing A



(c) B Absorbs A

Figure 3: Quantitative Joining

Given that the two particles are unequal in size, the larger particle (B) will pile up constituent particle members of {f} (Figure 3b) such that they over-flow particle A. By over-flowing the smaller particle A, the larger particle B absorbs it (Figure 3c) and they becomes a single, quantitative CPL2 particle.

3.3.3 Join Status

CPL2 particle joining is not always successful. The interacting particles may separate and pull away from each other. Or they continue in their endeavors but are ineffectively joined and future interactions with other particles exploit the weakness and break them apart.

In either form of join, the collisions may break away sub-f particle bits and/or smaller sub-f particle groups. The broken sub-f particles may get assimilated in quantitative joins. These sub-f particles continue to accumulate in and around the forming CPL2 particles.

4 Level 2 Extended Growth

4.1 Series Particles

Additional series particle joins may occur when other CPL1 particles of opposing direction of rotation come into contact with an existing, forming a CPL2 series particle. Illustrated in Figure 4, the direction of rotation of the newly interacting CPL1 particle, say C, must oppose the direction of rotation for series member B, where A and B are already a CPL2 series particle.

The small surface particles of {f} members of the newly joined CPL1 particle C will peel-off and join in the independent figure-eight flow of the existing CPL2 series join particles. The flow is represented by a teal color going to the right on the z-axis and a light blue in the returning leftward on this axis. Thus the series join evolves into a longer figure-eight flow around and between all CPL1 members of the growing chain. In Figure 4, four additional CPL1 particles (C, D, E, and F) have joined the original members A and B.

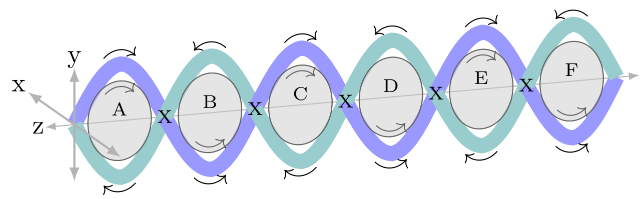


Figure 4: Series Particle Growth

Figure 5 illustrates that growth may also occur at intersections along an axis. Any member or members of an existing CPL2 series particle may join with any member or members of itself or another CPL2 series particle. The only requirement is that the point of contact, or re-contact must be fully compatible with all series particle rotation relationships.

Extensive CPL2 series particle growth along many points of the axis of rotation allow for viewing the matrix as a surface (Figure 5). With additional series joining additional surfaces may be created as new surface layers within the series join. Layer surfaces may result when a part of an existing series join comes in contact with other areas of itself and successfully completes the series join process, or when the edge or surface of one series join comes into contact with another series join and successfully completes the series join process.

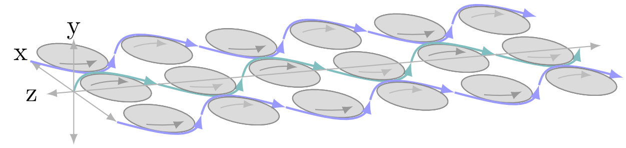


Figure 5: Layered Series Join On X-Axes

Gaps may form between surface layers. The gaps may be wide, skipping many of the series members to then attach to another member. They may also be narrow, perhaps skipping a single member to then join with the next member.

4.2 Conductance

Small (forming) CPL1 particles may come into proximity with the maturing surface layered edges of a CPL2 series join. The particle's approach may be either in the same or opposing direction of rotation of the series join and so be involved as either a series or quantitative join. The result of this interaction differs from regular CPL2 joins due to the difference in size between the approaching CPL1 particle and the established CPL2 series particles.

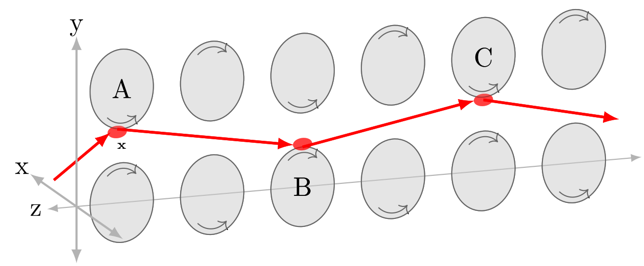


Figure 6: Series Layer Conductance

Figure 6 illustrates a CPL1 particle 'x', with the path and particle shown in red, approaching a CPL2 series particle layer from the left hand side of one of its surface layers. It collides with an existing member of the CPL2, say particle A. A will attempt to join with x based on their directions of rotation. The join may be successful, but of interest here are failed joins. Given a collision of A with x, x may rebound inward between the surface layers of the CPL2 particle.

x will probably not rebound parallel to any neighboring surface layers. Rather it is likely that x will collide with some other member of the CPL2 series particle. In this example, after the collision with A, x rebounds and collides with B and rebounds to the right. x then collides with C and rebounds out of the series layer particle to the right.

In this way X may be 'conducted' onward through the CPL2 surface layers and exit out somewhere in, between, or at the other end of the series join surface layers. The conducted path may be thought of as a flow of matter through the CPL2 layers. And so CPL2 series particles introduce a third dimension in the growth of CPL2 particles, that of conductance.

4.3 Quantitative Growth

CPL2 quantitative particles continue to gather CPL1 particles into themselves or be gathered into other forming CPL2 quantitative particles. Either behavior increases the size and mass of CPL2 quantitative particles.

The growing CPL2 quantitative particle assimilates smaller particles by over-flowing constituent surface member particles over them. After the quantitative join, the larger, united particle continues to rotate. Given a number of assimilated (smaller) particles, the over-flow particles tend to remain near, but detached from the growing particle. In this way the CPL2 particle accumulates an ever-growing cloud of particles moving in the direction of rotation.

4.4 Level 3 Hybrid Growth

The gathering behavior of quantitative join particles is not limited to interacting with other quantitative join particles, it also allows for quantitative gathering of series CPL2 particles. The process starts as described for regular quantitative joins, with both particles rotating in the same direction and, at the point of contact, the opposing directions of rotation gathers surface particles of each one against each other.

At the point of contact, the joining properties of the series CPL2 particle are different than those of a regular composite particle. The difference is due to the matrix or 'fabric' like surfaces of the CPL2 series particle. The spread-out-matrix properties of the series join particle presents as a larger size in the join, but, in this case, size is indicative of volume not mass. As the larger quantitative particle overflows the series particle, the series particle wraps and folds into the larger particle thus adding some of its conductive behaviors to the larger quantitative particle.

In this way quantitative CPL2 particles tend to evolve into hybrid CPL3 particles, combining the properties of the larger mass of a quantitative particle and the conductance of the series particle. As CPL3 particles interact with other CPL2 particles, the dimension of conductance becomes more pronounced, gaining equal footing with the existing properties of rotation and size.

5 Prime Particles

As additional CPL2 series join particles are gathered into CPL3 particles, conductive patterns emerge. The patterns are the result of conducted matter's ability to flow into, through, and out of channels that may be found in the forming particle. Areas of in-flow are receivers and areas of out-flow are emitters. These channels are a critical part of further particle maturation.

Channeled flow may form a closed circuit of conducted matter. Closed channel patterns, along with sufficient attained size and mass, elevates the CPL3 particle into next level particles: Prime or Complementary. Prime particles combine with other primes to form larger particles while complementary particles develop individually and may (later) indirectly join with prime particle groups. Channel patterns for prime particles are straight forward and may be generalized into two types: Effective and Ineffective. Channel patterns for complementary particles are more complicated and discussed below.

- **Prime Effective** Here many of the channels conduct particles into, through, and out of the Prime particle.
- **Prime Ineffective** Here only a very few channels can successfully conduct matter in/through/out the Prime.
- **Complementary Particle** See section 5.3 below.

5.1 Effective Primes

Effective primes conduct particle flow in and out of emitters and receivers. The conducted particles flow out from an emitter and back to a receiver forming a flow-loop. As illustrated in Figure 7, each effective prime has two emitter-receiver circuits such that each end of the effective prime emits conducted matter which flows back towards the receivers located somewhere in the middle section of the particle. The back-flowing particles are the result of the effective prime's rotation.

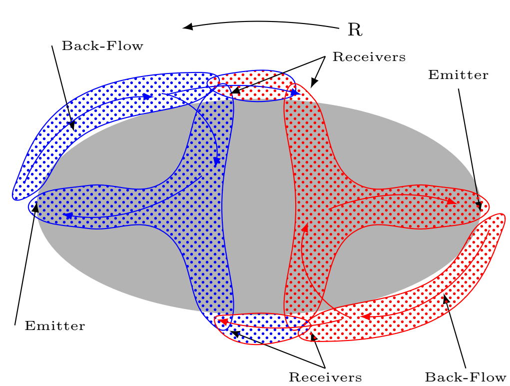


Figure 7: Effective Prime (Cross Section)

- Not all conducted flow matter from an emitter will get back to a receiver. In addition, particles 'in the neighborhood' of the effective prime may enter the flow through one of the receivers, joining existing particles in the loop, and flow towards an emitter.

5.2 Ineffective Primes

Ineffective primes do not form many (if any) emitter-receiver circuits. Areas within these primes can serve as receivers and emitters. These areas are arranged in a haphazard fashion. Still, as we will see, ineffective primes are critical to the building of regular matter.

5.3 Complementary Particle

Complementary effective prime particles[2] (CmP) form by combining two effective prime particles together. The particles join at their middles to form' a '+' shape. A representation of a CmP is shown in Figure 8. The CmP is represented as two ellipsoid spheres comprised of shaded frames. The axes and rotations of the ejected particle is:

- End-over-end on the 'z-y' plane with rotation on the x-axis. The emitter end is noted with a red dot; and

- Around-and-around on the 'x-y' plane with rotation on the z-axis. The emitter end is noted with blue dot.

We can view Figure 8 as two clock faces aligned in three dimensions. The two clock faces bisect each other at x-y-z (0,0,0). As we look along the x-axis, the red effective prime's clock faces us on the z-y plane. The red-dot is at 12 o'clock on the clock's face. As we look down along the z-axis, the blue effective prime's clock faces us on the x-y plane. The blue-dot is also at 12 o'clock on the clock's face.

The rotation of each particle is in relationship to the other. For example, if the red particle sets into a clockwise rotation so will the blue particle. And vice-versa. Clockwise rotation is no more or less effective that counter-clockwise rotation.

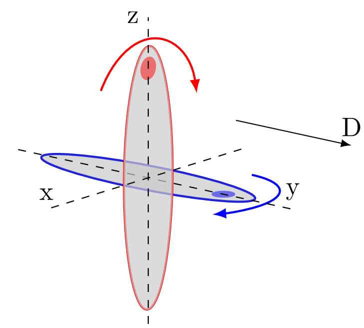


Figure 8: Complementary Particle Rotations

As the two particles approach each other, they are rotating in the same direction so it starts as a quantitative join. Figure 9 illustrates how conducted matter flows through the CmP. It is similar to the effective prime described in Figure 7, but has only a simple channel at its center. Note the flow from one end, the receiver, to the opposite emitter end. Also note the two illustrated top and bottom portals and how they are separated into several channels. These channels serve as receivers or emitter as manifested by their specific make-up. As conducted particles flow through the CmP, some of the flow gets routed into or out-of the midsection of the CmP. The in-flow and out-flow at the midsection serves to form a conductive bond between the two particles of the CmP[3].

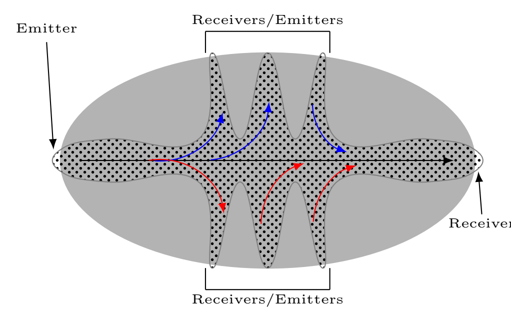


Figure 9: Complementary Particle Flow

6 Paired Prime Particles

An actively conducting effective prime particle (Ep) may interact and join with an ineffective conductive prime particle (Ip (that is eye-p)). The two primes rotate in the same direction[4] and so the process begins as

[2] The particles are 'complementary' because they form a special relationship with active triple primes.

[3] Included in this repository is a Python animation (file named CmP_Animation.py) depicting the dual rotations of the CmP.

[4] The two primes, rotating in opposite directions, may also try to join (as a series join). However, this type of paired prime is not discussed here.

a quantitative join and the two particles begin to pile up constituent particles of {f}up against each direction of rotation. But the new dimension of conductance modifies the regular process of a quantitative join.

Pools, above and below, of constituent particles quickly develop: One is from the scraped particles of the quantitative join; and the other is from the conducted particles of either particle. Either of the prime particles can exploit emitter or receiver channels in the other particle. However, as Figure 10 illustrates, the Ep is much better prepared to exploit channel flows into the Ip particle.

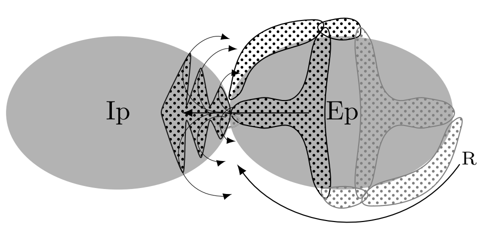


Figure 10: Ep-Ip Paired Prime

Figure 10 illustrates that an Ep and Ip may successfully join if the Ip has enough emitter-receiver channels, and the Ep is in the right position to emit particles into the Ip's receiver channels (see Figure 7 for a detailed description of the Ep). The Ep then emits particles into the Ip's receiver channel (at the Ip's 3 o'clock position) which then flows into and out of the Ip's emitter channels. Some of these out-flow particles may then be caught up in the Ep's receiver circuits (at the Ep's 12 and 6 o'clock positions). Given that there are enough of these receiver-emitter flow loops between the two primes, they may persistently join as a single paired prime particle[5]. Once the two particles complete the join, the paired prime will rotate in the overall direction of the Ep.

Success is not guaranteed; It might often be the case that the effective prime cannot find enough receiver channels in the ineffective prime and, indeed, the ineffective prime may have none. Without enough purchase channels, and/or not enough in a timely manner, the two primes join effort will fail and they will go on their separate ways. There may be some transfer of conducted particles, there may be various groups of matter broken off or lost in the collision, and, as always, the join effort may produce sub-f particles.

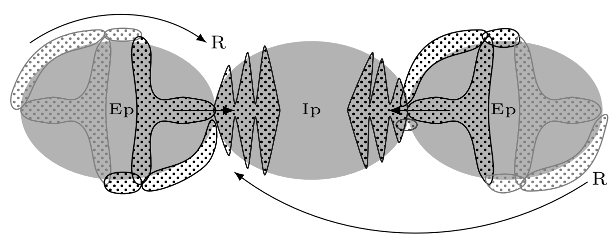
7 Triple Prime Particle Joining

7.1 Join Types

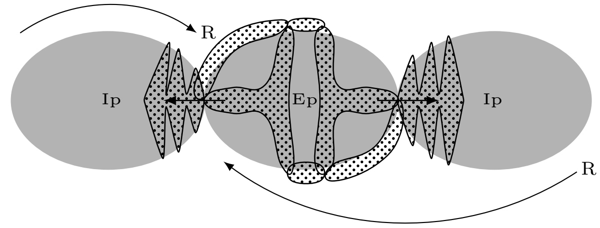
Triple primes join in one of two ways:

- **Active:** This is where two effective primes join to a common, middle ineffective prime (see Figure 11a).
- **Passive:** Here two ineffective primes join to a common, middle effective prime (see Figure 11b).

Paired primes are building blocks that join to a third prime particle for continued development. The new, third prime particle will join with either one of the existing paired prime particles, but not both. The join process begins in the same manner, as a quantitative join. The effective or the ineffective prime of the paired prime can attempt to join with either an effective (Ep) or ineffective (Ip) third prime particle. Given the paired prime notated as Ep-Ip, there are four possible join outcomes for the third particle:



(a) EIE Triple Prime



(b) IEI Triple Prime

Figure 11: Triple Primes

- **Ep of an Ep-Ip pair attempts to join with an Ep: Fail.** When the Ep collides with an new Ep: The strong conducted flows oppose each other and they rebuff each other.
- **Ep of an Ep-Ip pair attempts to join with a new Ip: Success.** See Figure 11b. The collision of an Ip with the Ep has much more potential.

[5]Note: The conducted channels of the successful join have a major effect on the combined paired prime. This will be discussed at greater length in the section 7.2.

Given a successful join, the resulting triple prime is an ineffective prime joined to an effective prime joined to an ineffective prime, or an Ip-Ep-Ip (IEI).

- **Ip of an Ep-Ip pair attempts to join with an Ip: Fail.** When an Ip collides with the Ip, the weak or non-existent conducted flows will not find purchase and they will rebuff each other.
- **Ip of an Ep-Ip pair attempts to join with an Ep: Success.** See Figure 11a. There is much more potential when an Ip collides with an Ep. Given a successful join, the resulting triple prime is an effective prime joined to an ineffective prime joined to an effective prime, or Ep-Ip-Ep (EIE).

7.2 The Conductive Join

The conductive joins between any combination of an Ep or Ip, whether as paired or triple primes, are the substantial heart of either prime particle. The reason is that these joins suffer tremendous stress while keeping the paired or triple prime particles attached to each other. The stress might be likened to springs constantly being pushed (compression), pulled (extension), and twisted (torsion). As the spring force is applied in some direction it may then released in the other direction. The forced load amounts to stored kinetic energy and adds or subtracts mass to the paired or triple prime.

The conductive joins also adds an increased amount of conducted matter to the joins. This is due to the stretching of the conducted particle: When a CPL1 assembles there is no single particle of {f}, or sub-groups of {f} particles, that are directly connected to all other constituent particles in the accumulating CPL1 particle. Particles assembled via the processes described in this Philosophy are loosely connected, that is some constituent particles are connected only to some the other {f} particles and so form a coherent greater particle. The stress of conductive join exploits this relationship.

As the conductive join is stressed by the greater joined particles, the conducted particles are stretched-out lengthwise and thinned-down along this length. This allows for additional conducted particles to flow into the conducted flow channels and, in the same manner, be stretched and thinned. This adds to the strength of the join and increases the amount of stored kinetic energy.

8 A Complementary Particle Joins a Triple Prime

Both active and passive triple primes may continue trying to join with new effective or ineffective primes, however, a join between an EIE triple and a complementary particle (CmP) is of most interest. As the CmP contacts the flow shell of the of an EIE triple prime, and both are rotating in the same direction, the collision begins a quantitative join. The EIE triple is quick to over-flow the CmP but the result may not be a classic scenario where the CmP is absorbed by the EIE. The paired-particle nature of the CmP may change the outcome.

The CmP now sits in the conductive flow of the EIE. Figure 12 serves to illustrate the relationships of the CmP and the flow. The 'z' axis represents distances that are closer to or farther away from the EIE at its center. The EIE's conductive flow is represented by the light gray field of dots. It extends along the z-axis with the top of the field being farthest away from the EIE particle. The field rotates in direction 'R', on the x-axis, around the center of the EIE triple prime. Each particle red and blue sit at their respective '12' o'clock position on their respective clock faces. In this illustration, the red-CmP rotates parallel to the field and the blue-CmP rotates perpendicular to the field. See Figure 9, in section 5.3, for an additional discussion of CmPs.

The CmP finds itself tumbling along on the x-axis, engulfed by the conducted particle flow of the EIE. As it does so, one of the CmP pair, say the red-CmP, may align in the direction of the flow and its receiver end (the non-red-dotted end) begins taking in conducted EIE flow. Then the red-CmP emitter end starts emitting the flow back into the main EIE conducted particle flow stream. While the red-CmP remains anchored in the primary flow direction, the blue-CmP finds enough flow to construct its own conducted flow circuit perpendicular to the red-CmP. The CmP pair continues their receiver-emitter circuits as they tumble around the EIE.

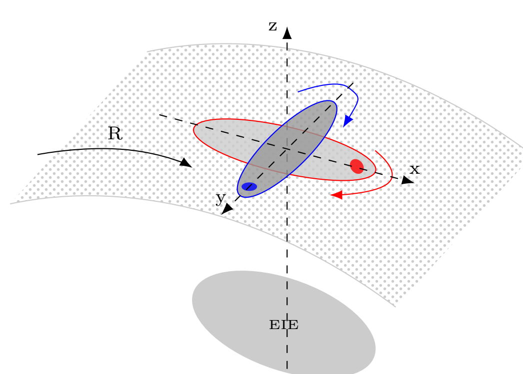


Figure 12: Triple Prime with Complementary Particle

The conducted flow of EIE matter through the CmP allows it to resist the quantitative pull of the EIE triple particle. The reason for this is that the emitter flow of the CmP's two particles, especially the red-CmP (in this example). The emitted flows of the CmP are emitted outwards in the EIE stream and some of the emitted flow is sent inwards towards the EIE triple prime. The EIE triple prime emitters push back against the CmP emitters creating a pressure that pushes the CmP outwards away from the EIE.

At play in this example scenario is a passive partner that helps to keep the CmP from the quantitative pull of the EIE: Sub-Particles of {f}. These energetic sub-particles remain in and around the EIE and apply a push in all directions. This action serves to:

- Add space to the triple-prime. The sub-particles occur at all levels in the building of a triple-prime and, by remaining inside the structure, serve to keep the primes light-and-airy. In this way the sub-particles facilitate repairing internal wear-and-tear of constituent particles.

- Add loft to the triple-prime's conductive flow. This helps to keep the conductive flow from succumbing to quantitative pull of the whole structure.

The quantitative join action of the EIE exerts a pull the CmP, which, at a critical point, due to the CmP's conducted EIE matter, is able to escape the pull and the energy from the sub-particles serves as a spring sending the CmP outwards in the direction of the larger flow pattern.

The CmP, however, is able to remain in the conductive flow stream of the EIE triple-particle as the conducted receiver-emitter flows of the the CmP serve to anchor the CmP in the flow. Given that the EIE triple has developed a full-flow pattern all the way around itself, the CmP will tumble in the flow and around the EIE tripe particle.

The conducted flow of the EIE triple manages the CmP. However, the EIE's process and effort to quantitatively join with the CmP remains active. The EIE triple continues its quantitative join efforts, ever trying to pull the CmP into itself. The EIE ever fails and succeeds only in springing the CmP back along the stream of its conductive flow particles. The actions of the EIE are persistent and unresolvable: The CmP remains tumbling in the flow of the EIE triple and the EIE triple particle cannot stop trying to quantitatively pull the CmP into itself.

The CmP and the EIE form a persistent and stable atomic particle: Hydrogen. The EIE triple particle with its two effective prime particles on each end of the ineffective prime particle, form the proton nucleus[6]. The complementary particle, ever tumbling in the EIE conducted flow, is the electron.

[6]Note: The IEI triple prime particle combination forms a neutron. Please refer to the Structure of Elements worksheet for details on their part in building atoms.