

## Paeps - external gravity particles

When contemplating attraction gravity, force lines transfer force toward the gravitating body. Pulling/attraction gravity suggests a straight centripetal force line between a body and it's orbital in space. But more occurs between two bodies and I will explain how gravity provides the motions. Overall, attraction gravity hinders understanding. Its force is limited to the straight line. A pushing gravity force is not directionally limited.

The concept of gravity having a metaphysical "attraction" nature needs to be corrected. It is time to look at gravity as having a physical causality. Doing so clarifies its logical system and properly specifies how it functions. Think of it as particles pushing on things. Doing so reveals exciting concepts.

Attraction implies one body such as earth pulling objects toward its center. Attraction implies action at a distance, a concept that is untenable in seeking physical understanding. Newton and others rejected the concept without further defining their "form" of gravitation. Einstein's gravity is warped space. Modern physicists may be able to visualize some form of local causality by using waves in their formulation of gravity, but their understanding is lost for the general population. The issue to be investigated here is whether we can define a pushing gravity that does not violate physical laws and which in further papers can be seen to improve the perspective concerning various physical events.

My definition is that space is infinite ether that is composed of gravitation moving in all directions at velocity  $C$ . The gravitation carries radiation which is the reason that electromagnetic phenomena travel at velocity  $C$  in space. Essentially, the luminescent ether must have physical properties and participate in the transmission of electromagnetism. This correlates with some of Einstein's later views in which space is an active participant and carrier system. He wrote that "space without ether would be unthinkable because there would be no propagation of light." My gravitation carries light. The velocity  $C$  of the gravitation components is relative to us on earth and to all spatial points of equilibrium such as heavenly bodies.

My gravity particles are called PAEPS – particles applying external pressure. The term paep is used to distinguish the particles from gravitons, a term used with various meanings and frequently a part of attraction gravity theory. I have based my model on a particle, but it can also be visualized as waves. For that I first propose a model connecting waves and

particles, to resolve an ongoing issue about light. Light photons have mass but don't have rest mass. I chose to call a repeating point within a beam to be a particle/photon. Let's choose the highest amplitude point of a transverse wave. The number of particles is then determined by the wave length. When the wave contacts mass the result is impact. The impact is caused because the wave 'slaps' the mass. The amount of 'slap' is a function of the transverse nature of the wave. At one extreme, if the beam is a straight line, impact is only at the initial point of contact and being a point may measure as zero. There is no lateral component. The more the wave of the transverse beam has amplitude, the more each wave will slap the mass. That slapping is the impact event from which we define mass, which we call photons, being within the beam. At the extreme, a high frequency of waves yields more slaps and thus represent more 'total mass'. The impact per wave remains constant, defining the photon, and depends on the amplitude of the wave. My paeps are particles rather than waves simply for convenience of discussion.

There is the corpuscular analogy comparing the gravitational field to our atmosphere with its molecules. Our atmosphere produces an atmospheric pressure, and gravity similarly provides pressure.

Paeps, as the components of gravitation are the smallest possible particles and fill the whole of space. Paeps are the longest wave length radiation which allows for the potential of penetration. Paeps serve as gravity only as long as they don't have spin or a short wave length. For this and subsequent discussion I need to define my use of the term spin. Spin is rotational plus internal motion within mass that, in total, defines its density. Spin is looping in place, be that place large or small. Spin is motion other than continuing forward as a beam of particles. The spin of mass affects the paep beams when the motion of mass particles intersects the beams at any angle. Conversely paep beams apply pressure to the intersecting mass stream of particles.

As the smallest possible particle and the longest wave, paeps form the background against which everything else is identified. As the background of everything they are thus detectable only via the force they impart.

In the "void of space," paeps travel at velocity  $C$  in all directions. In open space, there is paep equilibrium from all directions. The paeps have no net impact upon each other just as photons don't affect each other. A single mass located in this "void of space" will be impacted equally and constantly from all directions. Thus heavenly bodies take spherical forms.

How do paeps provide gravitation? Since paeps are so small and mass is known to be mostly empty space, most paeps pass through any mass. A few interact with particles of the mass and are converted or absorbed. Visualize, for example, a spherical planet. Paep

interaction results in a reduced pressure coming up from the surface on the side opposite the entry point side of the sphere. This reduced, upward-moving gravitation partially offsets the downward pressure of gravity from above. The ‘net’ result is the gravitation force as we understand it today. The force is greatest at the planetary surface as that is where the maximum percentage of upcoming paeps had passed through the planetary mass. An impacted mass located above the surface receives more from below since more of the paeps impacting it from below come at angles by which they miss the mass or pass through less of it. Thus, as the mass rises from the surface, the effect felt is of the same pressure from above and an increasing pressure from below. The end effect is a net lessening of downward pressure. As the mass continues to rise, the pressures become more nearly balanced from above and below ultimately achieving equilibrium in the “void of space.”

Carrying this logic forward yields the universally accepted inverse square law for calculating gravitational force by distance of separation. First off, each point within the mass that diminishes paeps distributes the diminishment exactly as the attracting particle at that site distributes attraction under current theory. Then, the net action at the surface is the same throughout the sphere as each paep stream arrives at the surface in the same manner that attraction gravity would. Then at some distance  $R$  above the sphere, the diminished paeps are merged with undiminished paep streams. The total net downward pressure remains the same but is distributed over the greater sphere which is geometrically larger by  $R$  squared. The difference between the two gravitation causes is that net pushing gravity has a limit. Considerations of that apply when analyzing the structure of mass and for black holes.

Among the advantages of pushing vs attracting gravity is the application of its lateral impact. Attraction applies only downward toward a center. An external pushing force acts from all directions and helps explain why things, such as us on earth, remain together laterally.

To relate to the idea of paeps penetrating the whole earth, consider a neutrino as support for this hypothesis of particles penetrating masses in space. The neutrino is a known particle that passes through mass and is rarely absorbed.

**Paeps serve more purposes than providing gravitation. The following are key properties of paeps:**

1. The paep is an elementary, perhaps the elementary particle.
2. Paeps travel at the speed of light. They do not exist as such at rest or at lesser speeds.
3. Paeps travel in equal quantity in all directions (isotropic) in the void of space, generally without interacting with each other, exactly as photon streams don't interact with each other.

4. Paeps are particles with no spin. They are like photons being particles within radiation.
5. Paeps penetrate mass, and in doing so are somewhat diminished, potentially converted or absorbed. The internal interaction of paeps with atoms is inelastic and converts paep streams to heat and light which subsequently emerge from bodies.
6. Paep streams can be affected laterally by gravity, ie by themselves. In an unbalanced region, paeps beams can affect each other such that path of one may be bent by another. Paeps may incur increasing wave frequency resulting from the turbulence.
7. The rotation of massive bodies is transferred to exiting paep streams.
8. A paep applies pressure to a spinning particle specifically because the paep does not spin. Because of its spin, mass is pressured, and in return, the spin causes the paep paths to become bent.
9. Mass exists as the antithesis of its background of non-spinning paeps. By exhibiting pushing pressure, paeps exhibit a force property providing the force and energy 'contained as subsets' of mass.
10. The field of paeps is the aether. Depending on perspective, slightly modified paeps wave lengths may be included in defining the aether.
11. Paep streams are rebuilt as consequences of gravitational stretching of light radiation over vast distances. The microwave background is partially stretched light beams.

**Subsequent development addresses the following topics:**

1. Paeps streams exiting one mass are bent and provide the net push that causes nearby masses to revolve around the center and to rotate. Bending paep streams created and maintain the solar system.
2. Gravitation is a force and when gravitation streams are bent they provide energy that can convert to and serve as the energy content of matter, thus reversing our mass to energy focus with  $E=mc^2$ .
3. The degree of wave vibration distinguishes gravitation particles from radiation particles. Bending of wave vibrations can lead to localized looping, thus to spin, ultimately defining mass particles. Altogether the three states form a spectrum of "states of existence."
4. Paeps do not penetrate nucleons, and therefore provide no net offset to paeps impacting the nucleus from the other side. Thus paeps provide the nuclear force. The nuclear force is the maximum force of paeps.
5. Magnetism is paep streams blocked from one direction.
6. Paeps beams serve as electron clouds within mass particles.
7. Paeps resolve the unification of relativity with quantum theory.

Further presentation topics include: 1. the structure of mass, 2. Gravity causing the structure of the solar system and of galaxies, along with relevance to Kepler's laws and 3. gravity as the cause of cosmological redshift.

Many in science have sought an illusive elementary particle. One theory proposed in the 1960s by Peter Higgs suggests the existence of a most fundamental elementary particle called the Higgs boson. It exists within a theoretical Higgs field that permeates the universe and gives mass to other particles. It is logically undetectable with today's technology. It was suggested as an extension of the many particles discovered under quantum theory. As an aside from our study of gravity, those who understand the reasons for conjuring up the Higgs boson will realize that paeaps act in a logical way that causes them to accomplish what is expected of a Higgs boson. And paeaps do so without having been incorporated for that purpose. It should not matter that the Higgs boson is assumed to be quite large while paeaps are quite small.

A system using pushing gravity particles was proposed in the past by a series of people. My perspective came together from my own contemplations over many years. I recently became aware of similar theories called LeSage theories, notably "Pushing Gravity," which appeared in the 18th century. For comparison I now explain pieces of the pushing gravity model.

## Pushing Gravity of LeSage

The process of defining a physically attributed gravitation began with theories for defining weight. It proceeded through many hands from Descartes in 1600s through Newton, Huygens, and to LeSage in the mid 1700s. LeSage first set the parameters of pushing gravity that only a few scientists have followed up on. Most recently a book about pushing gravity, published by Apeiron, summarizes recent thoughts by others. LeSage recognized and promoted the advantages of considering gravity as corpuscular (consisting of bits of matter) with impact interactions. He also predicted the mostly void space within mass which was confirmed centuries later. LeSage suggested corpuscles could push upon and penetrate masses while being only partly absorbed. With gravity passing through planetary masses, he described the resulting output region as shadowing. LeSage's shadowing suggested fewer upward pushing gravitons causing a net downward pressure and attraction upon any massive body above a surface.

LeSage presented many arguments similar to mine. His theory and mine are attempts to ascribe physical reality to gravitation. A few of his parameters are:

1. A change in state such as the attraction of a body is due to impulsion, a physical pressure.
2. The medium (ether) must be fluid.

3. The fluid must be discrete corpuscles flowing simultaneously in all directions (isotropic) while not interfering with each other.
4. The pores of bodies must be great, allowing nearly free passage to graviton corpuscles.

Over time sufficient challenges to details of LeSage's theory led to ultimate rejection of LeSage's work. Some of the concerns regarding pushing gravity have been raised and remain unanswered. Others have answers that require new concepts. Searching for answers ultimately leads into my perspective. Here are some challenges- and my answers:

1. Pushing gravity. It shows a shadow region with fewer gravitons residing between two heavenly bodies. But "What fills in the shadow output region to replace the absorbed corpuscles and retain the existence of space there?"

-my paeps convert to light and heat which is released in their place.

2. Consider that one property of LeSage's "ultra mundane corpuscles" is nearly infinite speed. Exceeding the speed of light removes the important concept of gravitation particles serving as the transportation medium for electromagnetic phenomena. Some theorists have invented a second medium acting in tandem with the original for carrying radiation independently of gravitation.

- my paeps travel at velocity C.

3. The primary objection to LeSage's theory has been that gravitons, rectilinearly passed outward from the sun, would to some degree impede the progress of orbiting bodies such as planets via friction. By bumping into gravitons during its orbital motion, a planet would be inhibited, incurring drag.

- my paeps provide the impetus, not any drag.

4. Aberration theory suggests the "apparent" angle of the gravitational source would be offset due to graviton transit time.

- bent paep streams, being the orbital drivers, exactly offset the aberration

5. Impacts with gravitons would raise the temperature of massive bodies to impossible levels.

- heat from impacts continues to exit, example being the sun.

6. Over a sufficiently long time, there must be depletion or net slowing of the universe's graviton streams due to absorption by masses. Gravity would diminish throughout the universe.

light waves stretch over distance recycling to long range paep streams over extreme distances.

My system overcomes the LeSage objections.