A Particle Theory of Light!
And Gravity Too!

Most Physics books and papers state that light (EM radiation) is both particle and wave. EM radiation has a frequency but it also bounces like a billiard ball. Some might say that it is a wave with particle like properties or it is a particle with wave like properties. Or maybe it is something we can't describe. Given my own personal ideas about nature, I am most comfortable with particles. So it would be natural for me to try to describe light as a particle with wave properties. So, here are my thoughts.

A wave has a frequency. A particle can have spin. The time of one revolution of the particle and its speed would define the wave length of the particle and hence the frequency. But to measure the maximum value means that the spin must vary in angular velocity. The concept of spin causing the frequency is not clear.

All EM waves are represented by a sine wave. Mathematically a sine wave has amplitude and frequency, $A\,sin(2\pi ft)$. Text books relate the amplitude to the intensity or energy of the EM wave. So how can particles describe amplitude that varies with time? One particle can have only one amplitude. Maybe it is the amount of mass, or the variation of velocity. Mass or speed changing at a sinusoidal rate is unlikely.

String of Particles

However a string of particles could give both amplitude and frequency. Figure 1 shows a string of dots (points) with varied spacing. Each dot is a particle. It is matched with a sine wave. The particles are closer together when the sine wave is at maximum and they are further apart when the sine wave is at minimum. The time of one wave length is from one peak to the next. The inverse of this time is the frequency.

Figure 1 is not yet available.

Speed of the Particles and the Wave

In ideal conditions all particles move at speed 'c'. In a previous white paper, I have suggested that the speed of EM radiation is dependent on the medium. In this case the medium is the field of particles itself. Various frequencies of EM radiation coming from the stars generate a field of particles moving in all directions. This field permeates space and all other objects and includes particle streams that vary in frequency and intensity.

When an EM wave comes from space and enters our atmosphere, the EM field characteristics change. The EM field in the atmosphere is different than the EM field in space. So the speed of the EM wave is different. The EM wave has different speeds in different objects because the combination of the Field and the object is different. There is also a loss of amplitude depending on the object.

Intensity of the Wave

The intensity of the particle stream is determined by the number of particles per wave. Assume light from the sun has 1000 particles per wave. Each particle has the ability to interact with the

retina of your eye. Too many particles may damage your retina. However, when the sun's light reflects off of a surface, many of the particles are absorbed and maybe only 100 particles per wave reflect and come to your eye. Your eye is not damaged by this lower intensity light.

Color

Different frequencies of visible light give us different colors. Sun light is a version of EM radiation. When sun light reflects off of a red surface, the non-red frequencies are absorbed and the red frequencies are reflected. The intensity of the red EM wave is also reduced. There are fewer particles per wave length.

We do not see the sun light as it moves through space. We do not see it as it reflects off of the red surface. We do not see it as it propagates to our eye. We only see red color when it hits the retina of our eye. Our mind does not tell us that there a reflected red light, our mind tells us that there a red surface. That is truly a remarkable event.

But sometimes we can see the red laser light from a laser pointer! Ambient light reflects from the surface of the red laser beam and moves toward our eyes. This reflected wave has a lower intensity. I suspect that the intensity of the red laser light would damage our retina if it were to hit directly in our eye.

Refraction

Refraction of light occurs at the interface of two mediums. Light moving in air enters water and it changes direction. This is a function of the interface and is not explained by the speed of light in air or water. More information is needed about the interface and how the direction of light is affected.

Gravity

It is entirely possible, that gravity is a specific frequency of EM radiation. It probably has a very low frequency and a very small amplitude. It can pass through most objects, but would interact and cause the object to move. Once the waves pass through, they are reduced in intensity (fewer particles per wave). When two objects are nearby, the combined reduction would cause the objects to move toward each other. In this case the EM wave (gravity) is a stream of particles that is nearly the same as Le Sage's theory of gravity. In fact, it would be the same if the frequency of the gravity wave was zero.

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