

Quantum Physics 108

We have discovered that there is no such thing as empty space. Quantum effects constantly produce particles and antiparticles "out of nothing," only to have them disappear few moments later. And we have also learned that space itself can either be almost flat or curved, depending on the amount of matter it contains. Additionally we have discovered that many particle level processes can be reversed in time. Many, but not all. We have recently learned that there are small but crucial differences in the way matter and antimatter behave. Could it be the reason why our universe is made of matter, while antimatter has all but disappeared? Possibly. But now it is time to discuss one of the most fascinating things in the universe.

Zero Point Energy

Space is also filled with tiny electromagnetic fields fluctuating continuously even in temperatures of absolute zero. There is a field where nothing, repeat, nothing is impossible because even with zero baselines, something is percolating; quantum percolations cannot be measured, yet they exist in every square inch of space. Remember probabilities? Simply put, Zero Point Energy or ZPE is the lowest possible energy that a quantum mechanical physical system may have and it is the energy of its ground state. All quantum mechanical systems undergo fluctuations even in their ground state and have associated zero-point energy, a consequence of the Heisenberg uncertainty principle. But because of the uncertainty principle all physical systems, have a zero-point energy that is greater than zero. HUH? I thought you said it had a zero baseline, Dave?

I did. But let me demonstrate something.

Liquid helium-4 (^4He) remains liquid, meaning it does not freeze, under atmospheric pressure no matter how low its temperature is, because of its zero-point energy.

Pretty weird eh?

The concept of zero-point energy was developed in Germany in the early 1900s by a group of physicists, including Max Planck, Albert Einstein and Otto Stern. In 1916 Walther Nernst postulated that the vacuum of space is filled with zero-point electromagnetic radiation. Vacuum energy is the zero-point energy of all the fields in space, which in the Standard Model includes the electromagnetic field, other gauge fields, fermionic fields, and the Higgs field. It is the energy of the vacuum, which in quantum field theory is defined not as empty space but as the ground state of the fields. In cosmology, the vacuum energy is one possible explanation for the cosmological constant. The variation in zero-point energy as the boundaries of a region of vacuum move leads to the Casimir effect, which is observable in nanoscale devices. A related term is zero-point field, which is the lowest energy state of a particular field. But what is important to realize is that the grounded state can and does have potential. It isn't zero, it is just a reference point, or ground. It is my belief, and others, that the ZPE is the Genesis energy. By that I mean it was here before the big Bang, Big Flow, or Big Creation.

The Zero Point Field

Dr. Deepak Chopra states that “The use of the word “Akasha” has lingered around the fringes of physics for at least a century. The reason for this is that an ancient and supposedly outmoded belief refuses to die, i.e. the belief that empty space is not empty at all” (and now we know that it isn’t empty at all).

Akasha, as in Akashic Records, is the Sanskrit word for space. In ancient times and in some current English based research the equivalent of this concept would be the *ether*. The idea is that an invisible medium that can’t be seen or measured allows light to travel from the stars, Chopra and others believe that without a medium to pass through, light waves have no way to move from point A to point B or to propagate. So what is this concept called the ether, and why don’t we use it today?

Simple really, for you see the ether suffered a decisive defeat in 1887 when two scientists named Albert Michelson and Edward Morley seemed to prove that light traveled at the same speed no matter what direction it moved in. This was important because the so-called “ether wind” that was thought to sweep energy through the universe should have made light travel slower going upstream than downstream. The result of the Michelson-Morley experiment even affected Einstein, who was convinced that space was a void, a belief that was also proven to be wrong. Physicists now believe that space is full of activity in the form of invisible fluctuations in the quantum field. These so-called virtual fluctuations account for matter and energy and also for distortions in time and space.

Theoretically, in order to reach the zero point in nature one could simply cool empty space down to absolute zero, and instantly everything would cease to vibrate. But this is not the case. The zero point exists and it may well provide the starting point from which everything in the universe springs. Chopra believes that since matter and energy are constantly emerging and then vanishing back into Quantumville, the zero point serves as the switching station between existence and nothingness. Chopra is a very interesting man.

The Zero Point Field is made up of Zero Point Energy, a grand expanse of energy spread out across space-time that we float along in, pretty much oblivious to our surroundings. The concept of ZPE has been around nearly as long as Quantum Mechanics itself, as inferred by those who developed the theory of it above. But the big discovery was that of Dutch physicist Hendrik Casimir, who in 1948, predicted the Casimir effect, a weak but measurable force between two objects, such as two metallic plates suspended parallel to each other. It seems that the resonance in space between the objects is the cause of the effect. The force can only be detected when the plates are very close to each other, and it fades away rapidly as the distance between the plates increases. This indicates a change in the electromagnetic field between the two plates. What was interesting was that not only was it an attractive force, but it could repel as well. The Casimir Effect is believed by many physicists to be concrete proof of the existence of ZPE. But not everyone agrees. But the Casimir effect is not the only “proof”.

Another historically valid test in the verification of ZPE has been what's called the "Lamb shift." Measured by Dr. Willis Lamb in the 1940's, it showed the effect of zero point fluctuations on atomic levels. The electrons are slightly shifted upwards in their atomic orbits. Physicist Margaret Hawton described the Lamb shift as "a kind of one atom Casimir Effect" (Phys. Rev. A 8/94) and predicts that the vacuum fluctuations of ZPE need only occur in the vicinity of atoms or atomic particles.

These discoveries completed a long process that included Max Plank, Albert Einstein, Otto Stern, Walter Nernst and yes, Willis Lamb. All had theorized the existence of ZPE. All turned out to be correct.

In the Zero Point Field, particles blink in and out of existence, creating a frothy head of virtual particles spreading through *not-so-empty* space. Remember the Heisenberg Uncertainty Principle? The more accurately we know the position of a moving particle, the more clueless we become concerning its momentum, and no quantum particle can ever be at rest. ZPE percolates EVERYWHERE.

ZPF and ZPE are a big part of the crux of the paranormal biscuit.

ZPF in my opinion for what it is worth has the biggest potential for being the secret to finding the Theory Of Everything. Think about this for a minute and just call upon your common sense. ZPF is the repository of all fields, all energy states, all virtual particles and all virtual fields. The Genesis Field. Everything that ever was or ever will be is in the ZPF. It is a Source Energy, the alpha and omega, everything and nothing. The ZPF may very well be the metaphysical link we have searched long and hard for. Since this field exists everywhere between matter, then everything that exists or existed in the universe is connected to everything else. Reality is one very large spider web with an infinite number of strands creating a wholeness that extends throughout time and space.

Whew!

ZPF operates on a self generating feedback loop. In other words, the percolations of the ZPF waves propel sub-atomic particles and all motion from all particles generates the Zero Point Field. This explains nonlocality, wave particle duality, and may just be the ultimate communications system in reality, ordinary or non-ordinary. Psychics and Mediums may be tapping into this in order to get their information.

Here is the icing on the cake.

Inertia and gravity are both electromagnetic phenomena that result from interacting with ZPF!

Suddenly, antigravity is not only probable, but possible.

Space travel could be accomplished by drives that link inertia, mass and gravity to ZPF. Sound far-fetched? Not to NASA.

Dr. Marc Millis of NASA's new Breakthrough Propulsion Physics Research Program has published articles relating to Zero Point Space Drives. "Challenge to Create the Space Drive" (J. Prop. & Power, V.13. No. 5, 1997, p. 577). In it Dr. Millis states, "Electromagnetism is also suggested as a target phenomenon for space drive research

because of ZPF. (Zero Point Field) ZPF is also an electromagnetic phenomenon and discovering a way to react with ZPF would likely create a space drive"

(References: <http://xxx.lanl.gov/abs/hep-th/9901011>

and Inside Zero Point Energy by Thomas Valone, Infinite Energy Magazine, Vol 5, Issue 26, 1999, www.infinite-energy.com)

By extracting energy directly from ZPF, no fuel would be required on the space ship. It will be quite economical. ZPF is believed to be massive, possibly infinite. A small amount of ZPE could provide huge amounts of fuel, far exceeding nuclear densities. And the real beauty of it all?

Its free energy.

Oh and by the way, the first Zero Point electromagnetic radiation energy patent was issued to Dr. Frank Mead on Dec. 31, 1996. *Patent no. 5,590,031* made history as Dr. Mead of Edwards Air Force Base designed spherical receivers to access zero point electromagnetic radiation. These receiving devices that convert neutrinos, gamma rays, tachyons to electricity require very high frequency receiver technology. Dr. Mead grapples with the high frequencies that may extend up to 10 to the 40th Hz (cycles per second). To get an idea of the dimensions of these high zero point frequencies, gigahertz radar is only 10 to the 10th Hz. Visible light is about 10 to the 14th Hz and gamma rays reach into the 10 to the 20th powers where the wave length is smaller than an atom. It appears very small particle devices are necessary to access these very high frequency zero point energy particles. Dr Mead is interested in working with single particles like protons or neutrons that may only be slightly different by only parts per trillion.

Now that your head is numb, let's blow the lid off with something related.

Orgone

Dr. Wilhelm Reich developed Orgone accumulators which in turn have been linked to current anti-gravity experiments by Tim Ventura and before him, John Hutchinson. It is my belief and the belief of others, that Orgone energy is in fact, Zero Point Energy.

Orgone energy is/was the 1930s brainchild of psychoanalyst Wilhelm Reich, who originated the term to describe a universal life force. Reich was originally part of Freud's Vienna circle, and believed that Freud's concept of libido had an actual biological basis. He developed a therapeutic practice that was designed to open up this bodily energy in the belief that a healthy psychological state resulted from uninhibited libidinal flow. This biophysical theory eventually developed into the concept of orgone (interestingly a word coined from the same root as "organism" and "orgasm") which Reich saw as a massless, omnipresent substance, similar to luminiferous aether (ether), but more closely associated with vital, living energy than inert matter. Sound remotely familiar? Orgone would coalesce and create organization on all scales, from the smallest microscopic units called bions in orgone theory, to macroscopic structures like organisms, clouds, or even galaxies. Reich's follower Charles R. Kelley went out on a

limb claiming that orgone was the creative substratum in all of nature, comparable to Mesmer's animal magnetism, the Odic force of Carl Reichenbach and Henri Bergson's élan vital. Reich believed that many diseases, and particularly cancer, were caused by deficits or constrictions in the flow of orgone in the body, and developed specially designed "orgone accumulators" which supposedly charged the body with orgone collected from the atmosphere. These devices were distributed as devices to improve general health and increase sexual potency, and later were adopted into tools such as cloudbusters, devices intended to stimulate rainfall.



Reich created the Orgone Institute after immigrating to the US, and pursued research into orgone energy for more than a decade, publishing his own work through the institute and producing orgone accumulators and related devices for distribution. The U.S. Food and Drug Administration (FDA) eventually obtained a federal injunction barring the interstate distribution of orgone-related materials, on the charge that Reich and his associates were making false and misleading claims. When Reich violated the injunction he was jailed, and all orgone-related equipment and literature owned by Reich and his associates were destroyed. But this was entirely for political purposes. Orgone and its related concepts were quickly denounced in the post-World War II American press; Reich and his students were seen as a "cult of sex and anarchy", at least in part because orgone was linked with the title of his best-known book *The Function of the Orgasm*, and this led to numerous investigations of Reich as being a communist and under a wide variety of other pretexts. He was accused by the New York Times as being "much maligned". The psychoanalytical community of the time saw his approach to healing diseases as quackery of the worst sort, and they took his comments about UFOs out of context to make him look like a charlatan.

Interestingly, Orgone has not been validated by scientific experiment, including the work of Reich's own circle of students, though some of the specific observations have been replicated. In particular, Stefan Mûschenich has demonstrated effects of orgone accumulators on test subjects in keeping with Reich's original descriptions, while a subjects exposed to a known "dummy box" showed no such effects. As of 2007, the National Institutes of Health database PubMed, and the Web of Science database, contained only 4 or 5 peer-reviewed scientific papers published (since 1968) dealing with orgone therapy.

Orgone is regarded by the National Center for Complementary and Alternative Medicine as a type of "putative energy", a model which some therapists use for clinical procedures but which is untestable or defies measurement.

Reich's theory was quickly discredited and dismissed. The current consensus of the scientific community is that orgone theory is pseudoscience.

The only problem is, it works. Ask my friend Robert L. how he manages to grow the greenest grass in his yard in Nevada. I won't go into why I know the other aspect of it works.

ZPF?