A Practical Guide to 'Free Energy' Devices

The presentation shown here is a digest of most of the information to be found on the web site http://www.esotericscience.com/Aether.aspx and is reproduced here by kind permission of the owner of the site.   It discusses the Zero-Point Energy field which used to be called the "aether" which term is still sometimes used for the ZPE field.

Chapter 1. The Aether

Re-emergence of the Aether
The aether concept has been around for some time, it was first put forward in the 18th century in order to explain the wave nature of light.   This was later abandoned because certain experiments seemed to contradict this idea. The chief of these being the 'null' result of the Michelson-Morley experiment. To this day scientists unquestioningly accept the idea that light exists independent of any other medium.

The notion that one can have a wave without anything doing the 'waving' seems to this author to be an absurdity, and is in itself a good reason to re-examine the whole issue of the aether. In fact, there are several other advantages to the aether model, many of which we will consider in these pages.

When one looks into the matter one discovers that there many problems with Einstein's theory of relativity. Milan Pavlovic has carefully examined Einstein's original special relativity papers and found them to contain many inconsistencies and questionable assumptions .[1]   Further, he looked at the experimental evidence used to justify the special theory of relativity, such as the Michelson-Morley experiment, the Doppler effect for light, Fizeau's light through water test and the aberration of starlight. He showed that most of these could be understood in non-relativistic terms or with the assumption that the earth entrains the aether.

Also the unresolved contradictions relating to the twin paradox and time dilation (discussed in Chapter 10), add further doubt as to the validity of the special theory of relativity. Note that we are not questioning the correctness of the relativistic formula, just the special theory of relativity and its postulates. Lorentz derived the relativistic formula prior to Einstein, based on the aether model and the results of experiments in electrodynamics. See also Burniston Brown's classic article [2] which takes a critical look at both the Special and General theories of relativity, as well as the Marcus Coleman article [3] which catalogues objections by well known physicists and mathematicians, to Einstein's theory of relativity. Further experimental support for the existence of the aether is provided by Webster Kehr [4].

Another important finding comes out of Harold Aspden's energy of rotation experiment [5]. He spun a permanent-magnet rotor up to its rated speed. He found that if the rotor is brought to rest and spun up again within a minute after stopping, it required only 30 Joules to bring it to the same speed as compared to 300 Joules for the first attempt! The importance of this experiment is that it strongly points to a medium that is affected by the first spin and which in turn affects the second spin. The most plausible explanation lies with a medium like the aether in which one can imagine the first spin creating something like an aether vortex (see Inertia section) which persists for a time after the object stops spinning.

Standard theory is unable to explain such an effect - this includes the Zero-Point field theory. Quantum Electrodynamics (QED) has led to the concept of electromagnetic fluctuations spontaneously arising out of the 'vacuum' [6].   This represents a kind of medium which can interact with the charge components inside matter. Such interactions with matter have been proposed as an explanation for inertia, among other things [7].   This theory, while plausible in the case of inertia, would have a lot of difficulty explaining the delayed effect of Harold Aspden's rotation experiment.

It seems now that even orthodox science is starting to re-think the possibility of an aether-like structure pervading space. Recently, an article was published in Scientific American by Theodore A. Jacobson and Renaud Parentani, which points out the similarity between the behaviour of sound waves in a fluid and light waves in curved space-time, such as around black holes [8]. The approach of assigning to space-time, the

qualities of a fluid, solves some fundamental flaws in the theory of photon radiation from black holes as developed by Stephen Hawking. This theory leads to difficulties such as infinite red-shifts for the virtual photons escaping a black hole, with implied zero-length wavelengths and infinite energies, etc.

Attributing granularity to space-time, in the way that a fluid has granularity at small sizes, provides a low wavelength cut-off that solves many of these difficulties. However, one of the consequences of their model is that light could have different velocities depending on how the 'molecules' of space-time move relative to one another. This includes photon velocities greater than "c" under certain conditions. Clearly this contradicts relativity theory! We include here a quote from the article which summarises this dilemma:

> "This fix to Hawking's analysis has a price - relativity theory must be modified.
> Contrary to Einstein's assumptions, space-time must act like a fluid consisting
> of some unknown kind of 'molecules'."

The article also has an interesting quote from a letter that Einstein sent to his friend Michele Besso about a year before his death, in which he expresses reservations about the very edifice he helped to create. The quote is included here for you to ponder on:

> "I consider it quite possible that physics cannot be based on the field concept,
> that is, on continuous structures. Then nothing remains of my entire castle in
> the air, including the theory of gravitation, but also nothing of the rest of
> modern physics."

The aether model allows us to describe the universe in a more intuitive way, which eliminates many of the paradoxes and contradictions of standard theory. For example, the particle/wave duality of light and matter, the origin of inertia and gravity, and the equivalence of gravitational and inertial mass, the conceptual contradictions with the collapse of the quantum wave function, the conflict between quantum electrodynamics and general relativity, the twin paradox of relativity, among others.

The Michelson-Morley Experiment

Before we can talk about the aether model we have to address the apparent 'null' result of the Michelson-Morley experiment (1880's).

The experiment was designed to detect the presence of the aether, by measuring the time of travel of light when the aether, or carrier of light, was moving towards or away from the observer. The time should be different in the two cases, in a similar way that waves on the surface of water would be affected by the movement of water that carries the waves. The outcome of this experiment was an apparent 'null' result. That is, the times of travel were the same, suggesting there was no aether carrying the light waves.

We say apparent because there were additional, more extensive and more accurate, experiments done in the early 1900's by Dayton Miller which produced a definite difference. See James DeMeo's article [9] for an interesting account of those experiments. In fact, even Michelson himself who repeated the experiment in 1928 found a small positive effect. But because the effects observed were much smaller than what one would expect from the then assumption that the earth was travelling at a rapid rate through a stationary aether background, the small effects were attributed to experimental error. Ever since then, the concept of the aether has been relegated to "fantasy-land" by the scientific community.

However we believe there is another, rather simple, explanation for this 'null' result which was put forward back in the 1800's and by Dayton Miller himself, and others since. That is, that the earth entrains the aether, causing it to rotate with the earth. This would seem quite plausible on the assumption that the aether is of a gaseous or liquid consistency, for if we spin an object in air or water the air or water will soon begin to spin with it. This implies that the aether would spin at the same rate as the earth on the surface of the earth and at an increasingly lower speed as one moves away from the earth.

Thus the model would explain why any experiments done on the surface of the earth would produce a null, or very small, result for the speed of the aether relative to the earth. It is interesting to note that Dayton Miller, who did most of his experiments on top of Mt. Wilson (1800m high), measured a higher result on average than Michelson and Morley who did their experiments in a basement close to sea level.

This would be consistent with the aether-entrainment model, which predicts that as one moves further up from sea level, there would be a greater relative movement of the aether compared to that at the surface of the earth. If this model is correct, then one would expect that if the Michelson-Morley experiment were done

in space, it would produce a much greater effect, bearing in mind that the sun will itself entrain the aether around it.

There is some support for this with the findings of Bryan Wallace [10], who in 1961 did radar distance measurements of the surface of Venus. An analysis of the data did not confirm the speed of light as a constant, but rather, appeared to show a component that followed the classical c+v format. Also, interestingly, the data contained diurnal, lunar and synodic variations.

The above model is also supported by experiments carried out by Yuri Galaev [11], who performed a variety of tests designed to detect the aether, using radio waves as well as light. His results were in general agreement with Dayton Miller's and interestingly, showed an increased effect with height from the surface of the earth, consistent with the aether entrainment theory. He has even had a go at measuring the viscosity of the aether.

Other Difficulties with the Aether Model

One of the other main objections people have to the aether model relates to the transmission of transverse waves, a characteristic of light vibration. If the aether were to be a solid it has been estimated that it would need to have the hardness of steel in order to support transverse waves at the speed of light. On the other hand gases and liquids don't normally support transverse waves.

However on closer examination we find that liquids can in fact carry transverse waves. There has been recent experimental evidence in support of this, where it was found that supercooled helium, which becomes superfluid at very low temperatures, transmits transverse sound waves [12]. Other difficulties, such as the photon or particle properties of light can also be accounted for within an aether model (see Chapter 4). For some other interesting ideas and perspectives on the aether concept, see the following references: [13], [14], [15], [16], [17], [18], [19].

A Working Model of the Aether

As a starting point, we will assume the aether to be of a consistency close to a liquid, and occasionally solid such as within nuclear particles. It would have the ability to flow like a liquid and to carry longitudinal and transverse vibrations. The aether particles would be a lot smaller than subatomic particles, and possibly consist of different types of particle.

Also it will be assumed that the aether extends into the 4th dimension (time). This is required in order to give a satisfactory explanation for charge and matter formation. It also allows gravity and quantum mechanical effects to be incorporated into the picture as described in the other sections. It is important to note that the aether is not to be considered as separate from other matter, but as the substrate, within which all particles are formed, and through which, physical forces are mediated.

Chapter 2. Matter

The Electron

If we consider the behaviour of charged particles, we can see from examining Maxwell's equations, that they behave a lot like sources and sinks of 'something'.   That is, the equations for the force between charges has similarities to hydrodynamic equations for fluid flow where negative charge is similar to a 'sink' and positive charge to a 'source' of fluid material.

As such, there have been a number of people who have proposed models which are based on the 'sink' and 'source' idea. However, most of these suffer serious difficulties because they are based on a 3D model. It is difficult to come up with a realistic scheme for the appearance and disappearance of material and at the same time maintain spherical symmetry. There is really only one way to go, if one is to have sinks and sources and be able to satisfy spherical symmetry, and that is the 4th dimension.

We will adopt here the model put forward by Maurice Cooke [20], where the aether flows inwards at the negative charge and outwards at the positive charge, via the 4th dimension. Furthermore, the flow of the aether follows a vortex type motion at the sources and sinks, in a similar fashion to the vortex flow which is observed in a bathtub as the water flows out through the drain hole.

Fig 2.1 illustrates this idea for an electron proton pair.
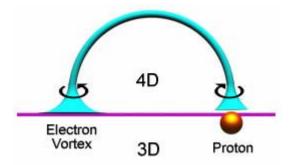

Fig 2.1 Aether vortex model of the electron.

The other important aspect of this model, is that it considers the electron to be nothing more than the aether vortex itself. The electron is not a 'solid' particle having a particular mass. In this model the 'mass' and inertia attributed to an electron, originate from the properties of a vortex which can behave as an independent entity, carrying momentum and force.

Charge

Another great advantage of this model is that it naturally explains the equal and opposite charge of the electron and proton. The vortex spins in a particular direction at the electron where it exits 3D space, and in the opposite direction at the proton where it re-enters 3D space, as can be seen from the geometry in Fig 2.1.

The whole picture is somewhat more complicated because of the nature of 4D space. Fig 2.1 is really a simplification for clarity, where the vortex is projected on to a 2D plane on which it appears as a spiral. The correct projection would be from a 4D axis to 3D space. However, adding an extra dimension to the 2D vortex spiral would imply that the entry and exit points for the vortex would have spherical symmetry in 3D space. In other words, spherically symmetric sources and sinks for the aether in 3D, which can be equated to the positive and negative charges. As pointed out by Maurice Cooke, this explains the rather curious observation that the 'masses' of the electron and proton are orders of magnitude different yet the magnitudes of their charges are exactly the same.

This model also explains the neutron being a special case of the proton, where the vortex link to the electron ceases to exist. We know from nuclear physics experiments, that if a neutron is ejected from the nucleus, after a certain period it naturally decays into a proton-electron pair. In our model this would equate to a vortex spontaneously forming in the region surrounding the neutron and creating an aether flow to the neutron via 4D, turning it into a proton. Somewhat like the way tornadoes form in turbulent air masses above the earth. This also accounts nicely for charge-conservation and the fact that the mass of the universe is found to be electrically neutral. Charges can only be created or destroyed in pairs.

The Proton and Matter Waves

Unlike the electron, the proton is assumed to be a particle or 'drop' of condensed aether. To see how this might come about within the context of the present model, we draw again on the theory put forward by Maurice Cooke [20]. He puts forward the notion that throughout space, there exist numerous oscillating 'primary' points which generate vibrations in the aether along the 4th dimensional axis. He in fact presents some evidence in support of this notion.

Because the oscillations are along the 4D axis, or perpendicular to 3D space, we are not directly aware of these vibrations as there is no component projected on to 3D space. In the same way that a 2D being living in a flat world, would not be aware of small vibrations in the 3rd dimension.

Furthermore, the primary points are assumed to move about with a range of speeds from zero to perhaps close to the speed of light. The oscillations of these primary points would combine and interfere with one another, to form regions of high and low vibrations along the 4D axis, in a similar way to that in which the waves on the surface of a pond combine to form regions of high and low amplitude - see Fig 2.2:
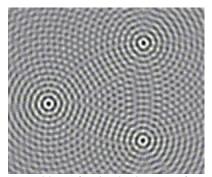

Fig 2.2 Superposition of spherical waves from 3 sources.

Again, the whole picture is a little more complicated because we are dealing with 4D space. Normally on the surface of a pond, the waves from a disturbance move outwards in circular rings from the point of disturbance. However, if one were to translate from the 2D space of the pond surface to 3D space, the circular rings would become spheres as a result of adding an extra dimension. We would therefore have in 3D space, spherical disturbances moving out from the primary points, i.e. bubbles within bubbles. Thus we would have throughout 3D space, regions of high and low vibration amplitude. Amplitudes which represent the movement along the 4D axis and not just vibrations in 3D space.

The key proposal put forward by Maurice Cooke in this area is that the proton and other stable atomic particles are formed or condensed out of the aether at the points where the 4D waves superimpose in such a way so as to create nodal points of low vibration. This is somewhat similar to the way water droplets condense out of water vapour in clouds. The atoms, like the droplets, would require a certain amount of energy to be applied in order to 'evaporate' or re-expand back into the aether form.

One would also expect other more transient particles to be created and re-absorbed, with the appearance and disappearance of these low-vibration nodal points. This is consistent with particle physics experiments which demonstrate particles appearing for short periods of time and then dissolving into other forms of energy, etc. It is also consistent with the existence of 'Zero Point Energy' that is associated with a seething background of energy fluctuations [21]. These have been observed at very low temperatures where thermal vibrations have been eliminated.

This fluctuating energy has also been likened to the ground-state of the electromagnetic field as described by Quantum Electrodynamics - a field which current theories indicate would contain an enormous amount of energy. The vibrational energy of the above-mentioned 4D waves, fits in nicely with this picture. In fact, the similarities go even further if one considers the 'quantum foam' picture proposed by Wheeler [22]. In this view, particles are like bubbles or vortices arising out of the dynamics of the zero-point energy fluctuations. He also describes the formation of hyperspace structures or 'wormholes' that channel energy into, and out of, 3D space which is very reminiscent of the electron vortices described above.

This model is also able to incorporate in a natural way, the concepts of gravity and inertia as well as quantum mechanical effects. Chapter 5 and Chapter 7 discuss these effects.

The Fourth Dimension

In order to get a better grasp of what a 4th dimension might be like, we will consider the geometrical analogy of moving from 2 to 3 dimensions. For 2D beings living in 'flatland' there would have to be some barrier preventing them from moving into the 3rd dimension. Otherwise they could become aware of the 3rd dimension as soon as they moved at right angles to the 2D plane. Furthermore, the barrier would have to touch every point on the plane, the beings sliding along it without realising it is there. By a similar analogy there would have to be a barrier to us moving along the 4D axis otherwise we would become aware of the 4th dimension.

In the esoteric traditions, we hear of the concept of a veil which separates the physical plane from the higher dimensions. We imagine that this veil refers to some sort of thin (along 4D axis) membrane that allows the normal rarefied aether to flow through it but not the denser form that constitutes physical matter. Note that the veil is thin along the 4D axis only. From a 3D perspective the veil would have to be touching every point in 3D space and might more appropriately be described as a fog. It might also be the case that the 3D matter is somehow confined within the veil or membrane itself, while the aether particles are able to flow through it. The veil needs to allow the flow of aether in the 4th dimension, otherwise we could not have the electron vortex as described above.

The eastern mystical traditions talk about incarnation, where the consciousness or soul 'attaches' part of itself to a physical body, in order to experience life in a more limited form. The part of consciousness which is identified with the body, cannot be aware of the 4th dimension, as it relies on sensory input from physical instruments, such as the eye. The veil prevents this dense physical matter moving into the 4th dimension, therefore physical instruments cannot have a direct perception of it. The only way for the incarnated consciousness to move into the 4th dimension is to detach itself from the physical body, such as occurs at death, or to partially detach as in out of body experiences, etc. There is good evidence for the existence of higher dimensional realities. Some of the most convincing evidence comes from people who have had near death experiences.

We also advance the proposition, that it is this veil or membrane that creates the 4D waves by oscillating along the 4D axis. We imagine that some form of intelligence has created the veil and infused it with the 'primary' points or 4D wave generators for the purpose of creating a 3D universe of dense matter, in which a myriad of life forms can experience this particular form of existence.

We also suppose that this membrane wraps in on itself, to form a 4D sphere, such that if a 3D being were to move long enough in a 'straight' line he would eventually return to the starting point. However the radius of such a sphere would be so large that there was little chance of that happening any time soon. Note that this would only be a sphere when viewed from 4D space, it would not be so from a 3D perspective. This is similar to the old analogy of a 2D plane or rubber sheet being wrapped around into a balloon.

It also follows from the above model, that one could stack additional veils or membranes along the 4th dimensional axis. Somewhat like stacking pancakes on top of one another with the syrup representing the aether. Each membrane would delineate a slice along the 4th dimensional axis that contains a full 3D universe. We would then effectively have a model of parallel universes (the pancake model).

Teleportation as Inter-dimensional Travel

The 4th dimension can also be used to help explain some of the more unusual phenomena that have been reported - that of teleportation. We have had reports of people and objects disappearing into thin air, such as with the Bermuda triangle. One of the more extraordinary stories concerns the Philadelphia Experiment [23].
It is claimed that the US military used Tesla-type technologies to try and make a ship invisible to radar. But in the process they managed to make the ship disappear from it's position and re-appear some distance away. This had some devastating effects on the people who were on board the ship at the time. Many have reportedly died in the process, some were literally embedded in the structure of the ship as if two objects had been merged together.

It would be easy to dismiss such amazing claims, were it not for the fact that some of the effects reported have been reproduced by modern day researchers. One of the reported effects is invisibility, which has been partially reproduced by scientists [24]. However, the most notable work in this area has been that of John Hutchison [25]. He has used the Tesla technologies, involving high voltages and radio frequency beams, to create some very unusual phenomena, such as anti-gravity effects.

In particular, he has reproduced some of the reported effects of the Philadelphia Experiment. There are a number of the photographs on the above referenced website which show pieces of wood and metal embedded in a larger slab of metal. This was a result of using high voltage and radio frequency instruments - no heating being involved. From the Philadelphia Experiment we have reports of people and objects being embedded in the steel structure of the ship. It is as if the included objects simply displaced the container material out of existence.

One way to explain these effects would be if the included object displaced the atoms of the container into the 4th dimension, making them disappear from view. This can be illustrated more easily by resorting to the old 2D "flatland" analogy. Let's consider 2D beings living on a 2D flat world, they would not be aware of the 3rd dimension. If a 2D object were lifted off the 2D plane into the 3rd dimension it would disappear from the view of the flatlanders, and it would magically reappear at the position where the object touched the 2D plane again.

Furthermore, if there was an object already at the point where the reappearing object touched down on the 2D plane, the two objects would merge into one another. The re-appearing object displacing the existing object's atoms into the 3rd dimension, or possibly even merging with the existing atoms if there was enough inter-atomic spacing, giving rise to the two objects being embedded on the 2D plane. A similar argument can be applied to the 3D case, where objects would disappear into the 4th dimension and reappear at a different point in 3D space.

A clue as to how this may be achieved, is provided by the fact that high voltages are often involved in these experiments. Given that in our model charge is considered to be an aether vortex into the 4th dimension, a high voltage region is expected to create a macro-scale vortex flow into the 4th dimension. One can imagine that this would create a pressure on the veil or membrane which normally prevents the atoms from moving along the 4D axis. Somehow, the combination of this pressure and the radio frequency waves used in these experiments, seems to create a hole or opening in this membrane, allowing atoms to flow into the 4th dimension.   It could just be that the strong aether flow into the 4th dimension, creates a high enough pressure to tear a hole in the membrane. Similar effects would be expected with strong rotating magnetic fields, which would be likely to create a strong aether vortex into the 4th dimension. In reports of people and planes disappearing from the Bermuda Triangle, for example, there has been mention by the pilots of rotating compass needles before the planes disappeared. This suggests that the planes had entered a region of strong rotating magnetic fields.

In such situations one would expect that the atoms are carried along by the high aether current running through the vortex region causing a movement into the 4th dimension, reappearing back in 3D space some distance away, see **a** in Fig 2.3:
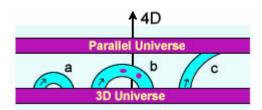

Fig 2.3 Teleportation through the 4th dimension.

It would seem reasonable that the objects would remain relatively intact during this process because of the atomic forces that normally keep an object together. However, this movement might alter the relative positions of separated objects involved in the transfer. This could lead to two objects landing in the same place in the 3rd dimension and could explain the reports of people embedded in the structure of the ship in the Philadelphia Experiment.

One might also speculate that the stronger the aether flow the further the objects would travel before reappearing back in the 3D plane, see **b** in Fig 2.3. Therefore, with strong aether currents, the objects might disappear completely and reappear in some other part of the 3D universe. One could even conceive that if there exist parallel universes that are not widely separated along the 4D axis, it might be possible to transport objects to another universe by this mechanism, see **c** in Fig 2.3.

Chapter 3. Magnetism

Magnetism as the Flow of Aether

It is well known that Maxwell's equations have many similarities to the hydrodynamic equations for a fluid. This is not surprising given that the original Maxwell's equations were derived on the basis of a fluidic medium (aether) [26]. It is worthwhile looking at these similarities more closely.

If we consider the general equations for fluid flow where we are only interested in describing the velocity, we get the following equations [27]:

$$\frac{\partial \Omega}{\partial t} + \nabla \times (\Omega \times v) = 0.$$

$$\nabla \cdot v = 0$$

$$\Omega = \nabla \times v$$

where **v** is the velocity of the fluid and Ω is the vorticity, or circulation of the fluid

Ω is in fact a vector which points in the direction perpendicular to the circulation and whose magnitude is proportional to the amount of circulation, Fig 3.1(a).

If we now look at the Maxwell's equations that describe the magnetic field we have, for the case where there are no changing electric fields, the following:

$$\nabla \cdot B = 0$$

$$c^2 \nabla \times B = \frac{j}{\epsilon_0}$$

where **B** is the magnetic field and **j** is the electric current

We can immediately see the similarities between these and the last two equations above if we equate the velocity **v** with B and vorticity with the current **j**.

This suggests that, at least under certain conditions, the magnetic field represents the velocity of the aether as projected on to 3D space. That is, as there is a 4D component to the circulation of the aether (see next item) the aether particles would not move parallel to the 3D velocity vector above, but would move in and out of the 4th dimension, with the 3D projected velocity being represented by **v**.

We can get a better idea of what is involved by considering a normal 3D vortex such as one observes in water draining from a bathtub. If we then imagine a 2D plane (x, y) at right angles to the vortex axis (z), the water molecules will follow a spiral path which appears circular when projected on to the 2D plane. However 2D flatlanders living on the plane would not see the water molecules going in a circle, rather the molecules will appear briefly as they cross the 2D plane before disappearing again from their awareness. We would expect something similar to occur when going from 3D to 4D space.
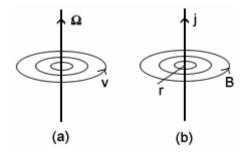

Fig 3.1 Comparison between magnetic field and fluid flow.

We can apply this idea to the case of a current-carrying wire, as shown in Fig 3.1(b). We know from experiments that the magnetic field around a current-carrying wire is proportional to the current and it falls off

as 1/r, where r is the distance from the wire. This would imply that the projected 3D velocity of the aether also falls off as 1/r with a magnitude that is proportional to the current flow.

Based on the previous discussion about the similarity of the current and the vorticity, this would suggest that the moving charges that form the current somehow create a preferential rotation of the aether around the wire. Given that electric currents are generated by moving charges, it remains to be explained how a moving charge can create a circulating aether perpendicular to the direction of motion.

Moving Charges and Magnetic Fields

As detailed in the previous section, a charge is considered to be a vortex of aether entering the 4th dimension (Fig 2.1). Let us consider the case when the charge moves in 4D. One might expect that the aether vortex, whose axis is perpendicular to 3D space (Fig 2.1), would lean over behind the direction in which the charge is being pulled: Fig 3.2. This of course is a much simplified picture of a 4D vortex. We would then have a net component of the vortex spin around the direction of motion where the 4D axis meets 3D space.
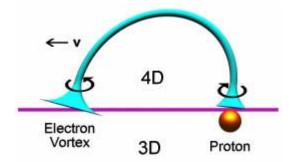

Fig 3.2 Electron vortex motion in 4D.

In other words, the aether flow from a charge would not be spherically symmetrical, but would show a preferential rotational movement around the direction of motion. The magnitude of that preferential spin, would depend on the speed of that motion relative to the aether background. The faster the charge moves, the more the vortex would lean over in 4D and the greater would be the component of spin projected on to 3D. Motions in 4D are difficult to picture but it does make intuitive sense.

This preferential rotation of the aether around a moving charge, would produce what we observe as the magnetic field, when all the individual charge contributions are summed. This picture also neatly accounts for the fact that, when a charge reverses direction of motion, the magnetic field rotates in the opposite sense. That is, the vortex leans over in the opposite direction, and therefore the projected spin goes from clockwise to anticlockwise or vice versa.

Aether, Magnetism and Relativity

Note that the above implies that the magnetic field from a charge depends on the speed of the charge relative to the aether background and not relative to the observer as standard theory suggests.

The idea that the magnetic field should depend on how fast a charge is moving relative to the observer leads to a number of conceptual difficulties and paradoxes. Where is the actual field in space if it depends on the observer? By assuming that the magnetic field is dependent on the speed of the charges relative to the aether a lot of the complexity simply disappears.

There is a logical requirement (Lorentz invariance) that the forces between objects, such as the force between two current carrying wires, should not depend on what the observer is doing. In the aether model, this condition will be satisfied in a natural way, because the forces surrounding moving charges will not depend on the speed of the charges relative to the observer but their speed relative to the aether. Let us see if this is consistent with observation.

We can consider the situation of two parallel current-carrying wires that attract each other by virtue of their magnetic fields, Fig 3.3.
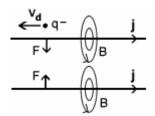
Fig 3.3 The force F between two current carrying wires.

One might ask what happens if in the above example we move both the wires in the opposite direction to the movement of the conduction electrons by an amount equal to the drift velocity of the electrons. In other words, the wires are moved in such a way as to make the conduction electrons stationary, on average, with respect to the aether. Shouldn't this make the magnetic field disappear, contrary to experience?

On closer examination we find that moving the wires in this way causes the positive charges of the atoms to move relative to the aether by an amount equal and opposite to the drift velocity of the electrons (V_d in Fig 3.3). This movement of the positive charges relative to the aether will create exactly the same magnetic field as the conduction electrons do for the stationary wire case.

In general, moving the wires at any speed will create a magnetic field that is the difference between the positive and negative charge contributions. This means that the net magnetic field will always be proportional to the average drift velocity of the conduction electrons relative to the wire, no matter what the speed of the wire is, relative to the aether.

It is not too difficult to see that any neutral object, carrying any current whatever, will behave in exactly the same way in both the aether model and the standard theory. Things get more interesting however, when we have objects with a net charge moving through the aether.

It is worth noting that the aether theory does not eliminate relativistic type effects. When two objects move relative to one another relativistic effects will come into play because of the finite speed of the forces, which is what relativity takes into account.

Differences Between the Aether Model and Standard Theory
It follows from the logic in the previous section, that an object with a net charge moving relative to the aether should produce a magnetic field even for an observer travelling with the object. Here we have a distinct difference between our aether model and standard theory.

One might ask if this difference really exists, how is it possible that this discrepancy to standard theory has not been noticed up to now? We believe there are two reasons for this:

Firstly, any experiments done with moving charges where the observer is stationary with respect to the surface of the earth, will produce the same results in the two cases. This comes about because the aether is assumed to be stationary with respect to the surface of the earth so that the speed of the charges relative to the aether will be the same as the speed relative to the observer.

Secondly, even when the observer is moving with the charges, the magnetic field predicted by the aether model is quite small for most cases that we encounter. To see this, we consider an extreme example of a 1m diameter conducting sphere charged to 1 million Volts. By standard electrostatic equations, we can calculate the charge on the sphere to be around 5x10-5 Coulombs. If we now moved the sphere at 100km/hr along the surface of the earth it would equate to a current of around 0.015 Amps. In the aether theory this would produce a magnetic field of around $2x10^{-9}$ Teslas near the surface of the sphere, or around 10^{-5} the strength of the earth's magnetic field. Quite easy to miss if one were not specifically looking for it!

There is however, another situation where we might expect to see a much greater effect. All things being equal, the electrostatic forces between two charged bodies are much greater than the equivalent magnetic forces at normal charge velocities. One would therefore expect that the force between two charged bodies, would be affected by the movement through the aether, and might be detected under normal conditions.

There is in fact some experimental support for this idea. Charles Morton has reported observing a variation of the force between strongly charged bodies when they are set in motion as compared to the stationary

case, even for low speeds [28]. The force was also found to be different in front compared to the rear of the moving charges.

This experiment, if it can be replicated, has important implications for the current understanding of how things work. According to standard theory, the forces between charged bodies not in motion relative to one another, should be the same in all inertial reference frames (frames moving at constant speeds). The 'Morton Effect' would point to, among other things, a universal reference frame or aether.

Further Experimental Support for the Aether Model

If we follow further, the consequences of the aether model, it predicts that an observer (detector) moving relative to a charge that is stationary with respect to the aether, will not see the usual magnetic field. This is in disagreement with standard theory which predicts a 'B' field whenever an observer moves relative to charge. Stefan Marinov carried out an experiment that is relevant to this prediction. He used a Hall effect detector to measure the magnetic field produced by a spinning charged disk, Fig 3.4, a variation on the Rowland experiment.
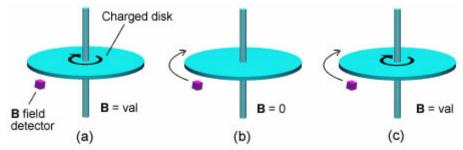

Fig 3.4 The Marinov experiment:
(a) detector is stationary and disk spins,
(b) detector rotates and disk is stationary,
(c) detector and disk spin together.

He reported the following results for 3 variations of the experiment:
(a) The detector is stationary and charged disk spins. This produced a 'B' field.
(b) The detector rotates but the charged disk is stationary. This did not produced a 'B' field.
(c) Both the detector and disk spin together producing the same reading as in (a).

We will analyse these findings with the standard theory and the aether model.

Standard Theory
(a) There is relative movement between the detector and the charges so we expect a B field.
    This agrees with observation.
(b) There is relative movement between the detector and the charges so we expect a B field.
    This does not agree with observation.
(c) The detector is completely stationary relative to the charges so we would not expect a B
    field to be registered.
    This does not agree with observation.

Aether Model
(a) Charges move relative to the aether so we would expect a B field.
    This agrees with observation.
(b) Charges do not move relative to the aether so we would not expect a B field.
    This agrees with observation.
(c) Charges move relative to the aether so we would expect a B field even though there is no
    movement of the detector relative to the charges.
    This agrees with observation.

As we can see the results are in disagreement with standard theory but are completely consistent with the aether model.

Chapter 4. Light

Light as a Vibration of the Aether

One of the main difficulties people have with the concept of light as a vibration of the aether is the issue of transverse waves. If we assume that the aether is somewhere between a gas and a liquid, as outlined in Chapter 1, then we are faced with the difficulty that gases and liquids don't normally support transverse vibrations.

However under certain conditions a liquid can support transverse waves. This has been proven by recent discoveries where it was found that supercooled liquid Helium is able to transmit transverse sound waves [29]. In other words, a state of matter where the atoms behave as a liquid but also display collective behaviour that is able to provide the restoring forces needed to support transverse oscillations. The closest we would normally come to seeing this type of behaviour is with the metal mercury. Mercury is a liquid at room temperature, but because of its high surface tension, it exhibits collective behaviour. A drop of mercury liquid will move about on a flat surface as a unit rather than the disordered spreading out that we see with water for example. This can be seen more readily by sprinkling powder on the surface of a mercury drop. When the drop moves all the powder particles on the surface will move in unison, illustrating that the surface of the mercury drop retains a collective movement even though it is a liquid. That is, the drop 'rolls' along the surface rather than spreading out. We will assume that the aether has properties similar to mercury or the supercooled liquid Helium.

Bearing in mind that electromagnetic radiation gets generated from accelerated charges, it becomes obvious from the discussion in Chapter 3 how light would be produced in the aether scenario.
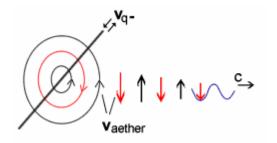

Fig 4.1 Generation of an aether wave.

As the charges are accelerated in one direction and then in the opposite direction, such as occurs in a radio antenna, we would get oscillations of aether circulation around the direction of the charge movement. Somewhat like the motion of a washing machine which rotates the water in alternate directions around the axle. We must bear in mind that in our model there is a 4D component to the aether rotation so it is not just a simple rotation of aether particles around the axis. One would expect that such disturbances in the aether would be propagated away radially from the line of charge motion (Fig 4.1). We can see from the above diagram that the radiation would be primarily a transverse or shear wave.

The Photon

We know that visible light is usually generated by the transition of electrons from one energy state to another, lower energy state. In such a case we would expect that the electrons are in some way first accelerated and then decelerated as they move from one energy orbital to another.

From the previous discussion we would expect that such accelerations would produce a wave disturbance radially outwards from the line of motion of the electrons. The difference here being that the disturbance is of a short duration because the motion of the electron goes through only half a wave cycle compared to oscillating charges. However we would expect that the disturbed aether would rebound from the half wave rotation and cause a disturbance or wave rotation in the opposite direction, but of smaller magnitude. It would make sense that this motion would continue for a number of cycles, each with a diminishing amplitude, until the aether reverts back to a normal state.
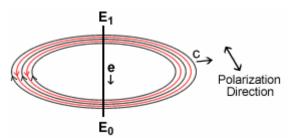
Fig 4.2 Generation of a photon.

This would imply that the transition of the electron would generate a wave train that spreads out in ever expanding circles, perpendicular to the line of motion of the accelerated electron, Fig 4.2. Somewhat analogous to the way a rock thrown into a pond will generate a surface wave train that moves out in ever expanding circles from the point of impact. The mechanism of generating the wave train would however be different in the two cases.

This 'wave train' is what the standard theories would refer to as the photon. It has a finite extension consisting of several waves so that it has some properties of a particle and at the same time behaves like a wave with a specific frequency. It is also easy to see that the frequency of the wave train will be dependent on how strongly the electron is accelerated and decelerated as it moves from one energy state to another. And this will be dependent on the difference between the two energy states. This is consistent with the $E = hf$ formula relating energy to frequency that applies to photon radiation, **h** being Plank's constant.

Aether, QED and the particle/wave duality of light
Modern science has not been able to reconcile the particle/wave duality of light. In some cases it clearly behaves as waves, such as with diffraction, and at other times as a particle. A sensitive light detector will register distinct 'clicks' or events rather than a continuous effect, which is suggestive of a particle or a quantum of light. It cannot simply be an expanding spherical compression wave in a medium as some people have suggested because several light detectors placed equidistant from the source will not fire simultaneously.

Also the energy of each 'click' is constant independent of the intensity of the source, the number of 'clicks' being proportional to the intensity of the light. How then does one reconcile the two different behaviours? Physics has given up trying to understand the inner workings of light. Quantum Electrodynamics (QED), which is our best attempt at explaining the behaviour of light, has a set of rules that correctly predict light intensities for various configurations but is unable to give a conceptual explanation of why it behaves as it does, [30].

We believe that the above photon model provides a plausible resolution of the particle/wave contradiction. As an example of this, we will first consider the often quoted case of light scattering by two slits. When coherent light is shone through two closely spaced slits, the light intensity on a screen behind it displays regularly spaced maxima and minima, Fig 4.3, rather than just a simple shadow of the slits.
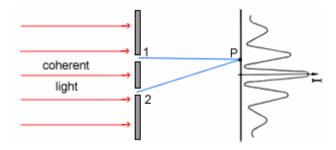

Fig 4.3 Double slit diffraction of light.

The variation in light intensity can be 'explained' as a superimposition of waves originating at the slit positions. That is, the intensity at **P** of Fig 4.3 for example, can be calculated by adding the amplitudes of two waves, one originating at slit **1** going to **P** and the other from slit **2** going to **P**, with their correct phase relationship. The intensity curve is similar to that which one sees when the height from two sources of water waves are combined. This clearly displays the wavelike behaviour of light.

However, light detectors placed at the screen still only detect one photon or quantum of light at a time. One might suppose that the photons travelling through slit **1** somehow interact with the photons going through slit **2** to produce the maxima and minima. However, this explanation is incorrect because experiments show that if the intensity of the light is reduced to such an extent that only one photon travels past the slits at any one time it still produces the same intensity variation when averaged over many photon counts.

It is as if a single photon goes through both slits, interferes with itself to produce the maxima and minima. What then is a photon? If it were a particle one would expect it to be localised, so that it either goes through slit **1** or slit **2** but not both. However interference requires a superimposition of waves from two different points that are coherent or in phase with one another. Without the addition from two coherent sources, the whole concept of interference is meaningless.

Therefore logically we have to conclude that whatever one conceives the photon to be it has to cross both slits in it's journey from the source to the screen or detectors. This means that in it's lateral extent it has to be at least as large as the slit separation. Our photon model described in the previous section fits the requirements.
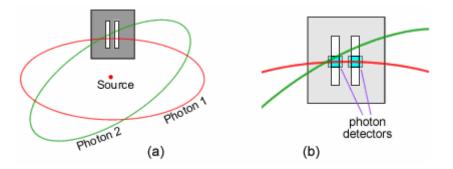

Fig 4.4 Photon geometries for the double slit diffraction experiment.

The photon rings cross both slits in most cases, Fig 4.4(a). The plane of the photon ring will take on many different angles. The angle being dependent on the direction of the electron motion that generates each individual photon ring as described in the previous chapter. Also, the photon has a short extent in the direction of travel giving us the characteristic quantum property.

Our photon model also allows us to explain some other anomalies associated with the quantum nature of light. With the standard particle picture of a photon one is led to ask whether we can find out which hole or holes the photon went through in the above double slit experiment to produce interference. It has been observed experimentally however, that if we placed photon detectors behind the slits as shown in Fig 4.5, in order to try and determine which hole the individual photon went through, we would lose the interference.
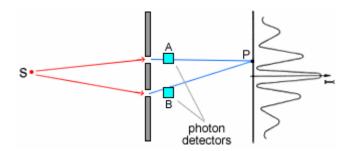

Fig 4.5 Trying to detect which slit a photon goes through.

This has become one of the mysterious rules of Quantum Electrodynamics theory, derived from observation, which says that if a photon, or any quantum 'particle' for that matter, has a number of possible paths it can take in order to get from A to B, then we have interference between the wave amplitudes for the different paths. However, if we know which path a quantum 'particle' takes, then we lose the interference, and the intensity or probability of observing a 'particle' is the sum of individual probabilities taken separately, see [30].

We would like to propose a simpler and more intuitive explanation for this. In the above example, Fig 4.5, if photon detector B registers a 'click' it blocks the contribution of our photon originating from slit 2, which is

required for the interference to occur, so that we are left with the pattern corresponding to slit 1 alone being opened. It is also generally accepted that photon detectors A and B in Fig 4.5 do not register the same photon, that is produce simultaneous 'clicks'. This would have contributed to the standard Quantum Electrodynamics picture as discussed above.

This can also be understood with our photon ring model. From Fig 4.4(b), we see that the two photon detectors, A and B, will only register simultaneous 'clicks' when they both coincide with the plane of a photon ring. For the majority of photons this will not be the case. Therefore, depending to some extent on the construction of the detector, only a small portion of the photons will register simultaneous 'clicks' on both counters.

It is quite conceivable that experimenters do see some coincident hits, but because it occurs in only a fraction of the cases it would be natural for them to assume that these were cases where more than one photon happened to be emitted at roughly the same time. This would need to be investigated further.

The second example we would like to consider here is that of a diffraction grating. Fig 4.6 shows an idealised grating consisting of regularly spaced grooves that produce maxima and minima in scattered light intensity. The standard Quantum Electrodynamics explanation of this, is that light from a source (S), is scattered from the raised elements of the grating, paths A,B,C,D, to produce an intensity at P that can be calculated by summing the individual amplitudes for each path A,B,C,D with the correct phases defined by the path lengths S-A-P, S-B-P, etc.
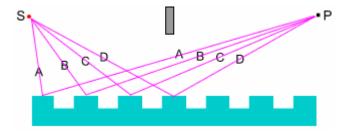

Fig 4.6 Light scattering by a diffraction grating.

Whether we get a maxima or minima at any point P will be determined by whether the individual path contributions interfere constructively or destructively. See Richard Feynman's work [30] Chapter 2, for a more detailed explanation. Now here is the interesting bit, it has been found experimentally that if the intensity of light is reduced to the extent that only one photon travels between S and P at any one time we still get the same maxima and minima variation when the data is averaged over many photon counts.

This is the same dilemma as with double slit diffraction - how can a single photon that is supposed to be a 'particle' traverse all the different paths in order to produce interference. The only way that this result makes any sense is to assume that parts of the photon travel through all the different paths. Put another way, there must be a coherent energy disturbance that travels along path A, path B, etc., otherwise the concept of interference and the Quantum Electrodynamics approach are meaningless.

Again, our photon model gives us a solution to this dilemma. Fig 4.7 shows how an expanding photon ring is able to affect many of the raised groves in the grating in a coherent way.
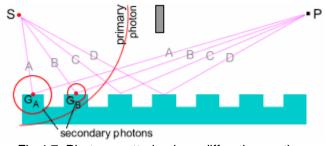

Fig 4.7 Photon scattering by a diffraction grating.

We are suggesting that when the photon ring arrives at the A groove point (GA), it causes electrons in the grating to oscillate in resonance. The excited electrons then, in turn, generate a secondary photon ring, in

phase with the original photon, that then travels from GA to point P.   Similarly for GB, etc., giving the correct phase relationships between the different paths.

This explains how a single photon can generate the diffraction maxima and minima. Not all photon rings will have their plane positioned as shown above, some will have their planes parallel to the grating groves and will not contribute to the interference.   However, on average, there will be many photon rings that cross two or more grooves contributing to the interference.

This picture is not too dissimilar to the classical electromagnetic treatment of light propagation. Many of the properties of light interacting with matter, such as interference, reflection, transmission, absorption, bending of light, etc., can be explained by assuming that electromagnetic waves impinging on matter cause it's electrons to vibrate in resonance, which in turn creates secondary waves that then interfere with one another [31].

What is different about our model is that it says that a single photon can influence more than one electron. This would be analogous to an expanding ring of surface waves on water, generated for example by throwing a rock in a pond, being able to influence many separate objects floating on the surface.

Energy of a Photon

The discussion in the previous section then leads us to re-examine the meaning of a photon's energy as given by E = hf. Is it not odd that a photon's energy should be proportional to it's frequency with no reference to the amplitude of the waves? Wave and field amplitudes normally feature in determining wave energies, so how does frequency figure in all of this?

From our model of light we have that the frequency represents oscillations of the aether corresponding to variations in the magnetic field. If we look at the following Maxwell's equation:

$$\nabla \times E = -\frac{\partial B}{\partial t}$$

where **B** is the magnetic field and **E** is the electric field, we see that a changing magnetic field will produce an electric field at right angles to the changing B vector. The faster the magnetic field changes, i.e. the higher the frequency of light waves, the stronger the induced electric field will be.   The electric field represents the force exerted on a nearby charge due, in this case, to a changing magnetic field.

We think it is more useful to view the photon's frequency as representing the force that it can exert on a charge rather than the photon's total energy.   The standard E = hf photon energy required to make an electron jump from a lower to a higher energy orbital inside an atom can be considered to represent the minimum force required to produce that jump. The corresponding energy will be given by the usual force x distance considerations, where the distance represents the length for which the force is applied. This does not mean that other parts of the photon ring cannot also affect other electrons in the same way. Only the part of the photon ring interacting with the electron will lose it's energy to the electron. This is similar to the way water waves will affect multiple objects floating on the surface of the water.

This resolves another of the paradoxes of the standard theory - the absorption of a photon through it's interaction with an electron inside an atom (the Photoelectric effect). As we have argued in the previous section, the photon has to be at least as large as the slit separation in the 2-slit photon interference experiment for the whole thing to make sense. For light that means at least approximately one millimetre in size.

Even without that, it is difficult to see how a photon could be smaller than one wavelength of the light vibration constituting it, which for red light is about 10^{-6}m. Therefore, we have to ask how can an electron whose motion is normally limited to atomic dimensions (around 10^{-10}m), absorb or negate a disturbance at least 10^4 times larger, and more likely at least 10^7 times larger, than the atom. This is conceptually illogical. (We note that although it is possible to create a disturbance smaller than one wavelength by superimposing a number of waves of slightly different frequency, to negate that disturbance would involve negating all the constituent waves, which leads us back to the original dilemma).

This problem does not arise with our model, since the electron only affects the part of the photon ring with which it interacts - it does not negate the whole photon. It only appears to do so conventionally, because of the way the photon energy has been defined. The author is not aware of any experiment which clearly demonstrates that the photon is totally annihilated. Very few experiments deal with single photons, most

involve light which is made up of numerous photons. It would be difficult to determine accurately what happens to any one single photon under such conditions.

Going back to the photon interference experiments described in the previous section, the photomultiplier that is used to detect photons will register a hit whenever an electron is knocked free of an atom so that it can then be detected and amplified by the instrument to register a signal. If we then assume that the probability of knocking an electron free is proportional to the intensity of the light at the detector our photon description is complete.

Electron-Positron annihilation
In our model, the positron is the same as the electron but with aether spins reversed, see Chapter 7 for a more detailed discussion of this.

Therefore, in an electron-positron annihilation we have the two particles both creating magnetic type aether spins in the same direction. This is because although their charges, and therefore spin directions, are normally opposite they are moving in opposite directions with the result that they will both spin the aether in the same direction around a line joining the two particles, as shown in Fig 4.8.

The electron and positron will accelerate towards one another under the influence of the electrostatic force and will therefore create a rapidly increasing rate of rotation of the aether just before the collision. According to our model of photon creation outlined in the previous sections, this rotational aether disturbance should give rise to an expanding photon ring at right angles to the line joining the electron and positron, as shown in Fig 4.8.
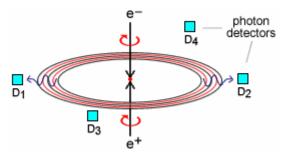

Fig 4.8 Electron-positron annihilation.

Based on this reasoning, the two photons moving in opposite directions, which are normally detected with electron-positron annihilation experiments, are not really two separate photons but the opposite ends of an expanding photon ring.

Another interesting observation with electron-positron annihilation experiments is, that in a small percentage of cases, three or even more photons have been detected simultaneously. This is perfectly consistent with our photon model. We see from the photon ring geometry that if a photon is registered at a detector (e.g. D1 in Fig 4.8) there will always be a second event registered for a detector placed at the opposite end of the ring (detector D2). However, a third event will only be registered if the third detector is coincident with the plane of the ring (D3) and nothing will be detected if it is positioned off the plane, like D4 in Fig 4.8.

Since the probability of the plane of the photon ring being coincident with three randomly placed detectors is small, our photon model accords with observation. This also strengthens our argument that a single photon can affect more than one electron, as discussed in the previous section.

Chapter 5. Gravity

Gravity as a 4D Wave Phenomenon

Modern science is still not able to give a convincing explanation of how gravity works. It struggles to explain how two bodies can pull on one another at large distances. The conventional view involves the rather peculiar notion that gravity results from an exchange of particles (the as yet unseen 'gravitons') between the planetary bodies.

We think that there is a much more simple and conceptually more satisfying explanation for gravity, which involves the idea of a push or shadow effect. If a force is transmitted to a body from 'something' pushing on it from all directions the body would remain stationary as all the forces would cancel out, as shown in Fig 5.1(a).
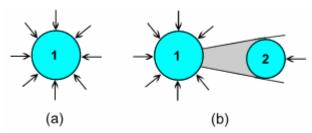

Fig 5.1 The shadowing effect of two bodies resulting in an 'attraction'.

However if a second body is brought close to the first one, part of the impinging force on body 1 would be blocked out and cause a net push towards body 2, as shown in Fig 5.1 (b). Similarly, body 1 would cause a net push on body 2 towards body 1, resulting in what would appear to an observer to be an attraction between the two bodies.

This idea is not new, it has been proposed by a number of people, one of the earliest of which was La Sage [32]. He showed that the amount of shadowing produced is proportional to $1/r^2$, where **r** is the distance between the two bodies. This is consistent with the $1/r^2$ variation of the gravitational force. However we will not assume, as La Sage did, that the impinging force is caused by the bombardment of particles or gravitons or aether particles in our case. This type of assumption leads to other difficulties, such as the resistance and slowing down that this would cause to an orbiting body and incompatibility with inertia.

This is the fundamental flaw of all 'pressure' based gravity models - inconsistency with inertia. That is, if gravitational attraction is to be considered as an imbalance in the pressure due to shadowing it implies that any object moving through the aether will experience a greater pressure in the front compared to the back. It would therefore experience a resistive force, even if moving at constant velocity, contrary to experience.

We will adopt here, the model outlined by Maurice Cooke, which explains the push on the bodies to be a consequence of the shielding of 4D waves [33]. That is, aether waves along the 4th dimensional axis as described in Chapter 2. The very same waves which in the aether model are responsible for the creation of particles, giving us a way of unifying gravity and quantum mechanics.

As described in the Chapter 2, 4D waves are generated by 'primary' points and appear in 3D space as spherical waves travelling in all directions. Close to a planetary body, the waves from the opposite end are blocked by the planet, causing a change in the resultant interference pattern, or points of low and high vibration surrounding the body.   In such a situation, the superimposition of waves will produce a general drift of nodal points towards the body. The best way to illustrate this effect is with a computer simulation.
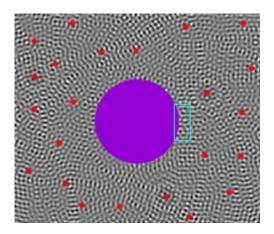
Fig 5.2 The interference pattern from spherical wave generators
(red points) surrounding a spherical body.

Fig 5.2 shows the arrangement used in the calculation. The purple sphere represents a planetary body. The red dots represent a more or less randomly distributed collection of 3D spherical wave generators. The black and white areas show the interference pattern produced by superimposing all of the individual contributions. Of course, this is not to scale. In actuality the waves would be of a much smaller wavelength, of the same order as atomic distances, but the principle would be the same.
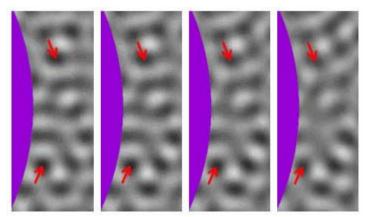
Fig 5.3 Series of images showing the nodal drift towards a planetary surface.
The time interval between images is about 5% of the wave period.

Fig 5.3 shows a magnified image of the rectangular region in Fig 5.2 as it develops over time. Although there are small changes in particular areas of the pattern due to a time evolution of wave amplitudes, the overall structure of the pattern remains intact from one image to the next. As the highlighted points show, there is a general movement of the recognisable structures towards the spherical body. The drift being greater the closer one gets to the surface.

Fig 5.4. Same as Fig 5.3, but without the planetary body.

Fig 5.4 shows the same area when the spherical body is not present. As before, there are small changes due to a time evolution of waves, but t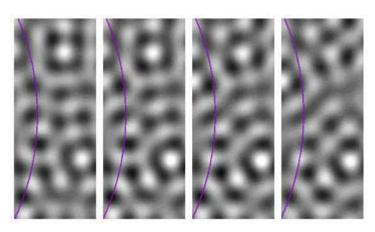here is clearly no movement in the structure of the pattern. As discussed in Chapter 2, the nodal points in the 4D wave pattern, corresponding to low vibration areas in the aether, are the points where matter particles condense out of the aether. If we further assume that the particles once formed have a tendency to 'stick' to low vibration nodal points, we can see that the nodal drift near a planetary body will exert a force on any objects in the vicinity, towards that body.

When a second body is brought close to a planetary body, it will block out some of the waves normally reaching it, as shown in Fig 5.1(b). This will result in a smaller nodal drift, and therefore a smaller force, on the side facing the second body. The side facing away from the second body will still have the same nodal drift and therefore push. The result of all this will be to produce a net force on the first body towards the second. By a reciprocal argument there will be a net force on the second body towards the first.

The amount of nodal drift near the planetary surface will be dependent on the amount of 'shadowing' from the other body. Given that the amount of shadowing follows a $1/r^2$ relationship, [32] the present model would be consistent with the $1/r^2$ variation of the gravitational force.

This model also explains why all objects fall towards the surface of a planet at the same rate independent of shape, mass or density. The nodal points at a particular radius all drift towards a planet at the same rate giving an equal 'push'. This model also accounts for the breaking up of large objects, such as large meteors, as they hurtle towards a planet.

Because the nodes are drifting towards the surface of a planet they get progressively closer due to lateral shrinkage. This lateral shrinkage will squeeze the object perpendicularly to the line of the nodal drift, as shown in Fig 5.5. The larger the object, and the faster it travels, the greater the lateral force will be.
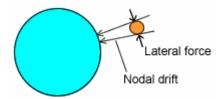

Fig 5.5 Compression forces on a falling body.

We should also note that the 4D waves will not necessarily be completely blocked at the surface of the planetary body. It is likely that they will penetrate some way into the body, with a diminishing amplitude. The 4D waves might even exit the other side with a much smaller amplitude, and possibly a phase shift due to the waves slowing down inside the body in a similar way light does when it passes through a denser medium. In either case, the net effect will be the same, a drift of the nodal points towards the body.

Aether and General Relativity
General relativity is an outgrowth of special relativity and embodies some of the same assumptions, such as the constancy of the speed of light. Because electromagnetic signals are used to measure distances and times, one could say that the curvature of space-time, or change in the metric, is a consequence of the need to maintain the constancy of the speed of light. However, once one frees oneself from the straight-jacket of requiring the constancy of the speed of light, a host of new options open up. Then it makes more sense to assume that the metric is constant and the speed of light changes, the effect is the same.

For example, the bending of light by gravity could be explained by assuming that the aether increases in density as one nears the surface of a planetary body. Light would then be bent or refracted in a similar way as when it passes through matter of varying density. Also, one would expect that the atomic processes of clocks might run slower in a denser aether, giving rise to the time dilation that we observe in a gravitational field.

Tom Van Flandern has shown that the effects ascribed to general relativity stated above, could be explained by an underlying medium whose density increases linearly with the closeness to the gravitational body [34]. The 4D wave model described above, gives us a possible mechanism by which the density of the aether would be increased near a planetary body. One might expect that the drift of the nodal points towards the surface of a planet would create a small, but definite pressure, on the underlying aether. A pressure that would increase as one moved closer to the planetary surface, giving rise to an increasing aether density.

Tom Van Flandern has also presented a convincing argument, based on experimental observation, suggesting that the speed of gravity is much greater than the speed of light [35]. The assumption that gravity is propagated at the speed of light leads to predictions that are in stark disagreement with observation. The notion that gravity propagates faster than the speed of light is also supported by experiments carried out by Eugene Podkletnov and Giovanni Modanese. They used a high voltage discharge mechanism to generate what they refer to as a gravity wave impulse [36]. This impulse was found to travel through thick metal and brick walls, and was able to affect objects a long distance away from the source. More importantly, they measured the beam speed to be more than 60 times the speed of light.   We must therefore allow the possibility, that the 4D waves we have been describing, can travel much faster than the speed of light. This also implies that gravity cannot be explained as a residual effect of electromagnetic interactions as some have proposed, because electromagnetic forces are limited to the speed of light.

Resolution of the Conflict between Quantum Electrodynamics and General Relativity
The inconsistencies between Quantum Electrodynamics and General Relativity are well documented. Jordan Maclay gives a good account of these [37]. The main difficulty is that Quantum Electrodynamics predicts a zero-point energy density in empty space to be somewhere around 10^{114} joules/cubic meter. It is amusing to think that 'empty' space could contain such staggering amounts of energy.

To get a better idea of the quantities we are dealing with, we can use Einstein's $E = mc^2$ formula to convert the above figure to an equivalent mass, giving us a density of about 10^{92} kg/cc. The consequence of this is that, as Jordan Maclay points out - "A volume the size of a proton in empty space contains about the same amount of vacuum energy as all the matter in the entire universe!". According to general relativity, this should produce a gravitational field so strong that it would collapse the entire universe into a region of space much smaller than the atom. That hasn't happened yet, so obviously there must be something wrong with the assumptions of Quantum Electrodynamics or General Relativity, or both.

If the aether theory presented here is correct it becomes obvious where the problem lies. As discussed in Chapter 2, the zero-point energy that Quantum Electrodynamics describes, can be equated to the energy of the 4D waves. It is likely that the 4D waves would contain a lot of energy, it is just that we are not normally aware of it because the vibrations are along the 4th dimensional axis with no component projected on to 3D space. However the key point is, that this enormous energy cannot be equated to mass which would influence normal mass gravitationally. These waves are instrumental in facilitating the attraction of two bodies as discussed previously, but until some of this energy is converted to dense matter it will not directly attract another body.

We think that this is a case where the $E = mc^2$ equation has been taken beyond the domain to which it applies. Or it could be said that the equation correctly describes the conversion of energy to matter and vice versa, but that we cannot always consider them as being equivalent.

Chapter 6. Inertia

Inertia as a 4D Wave Phenomenon

Modern science doesn't have an adequate explanation of what causes inertia. Standard theory attributes inertia to the interaction of an object with the background of all matter in the universe. This has its origin in Mach's principle, which argues that if an object were alone in the universe, how could it know it is being accelerated? However, no one has been able to give a convincing explanation of how this interaction with the matter in the universe comes about.

The same arguments can be applied to rotational inertia. A gyroscope for example will maintain its direction with respect to the background of stars if it is carried around the earth and brought back to its starting point. Again, rotational inertia seems to be tied to the background of matter comprising the universe. One is entitled to ask what kind of interaction with the background matter is capable of keeping the gyroscope aligned to it? The most sensible explanation for inertia is to assume an underlying medium, or aether. Inertia can then be simply explained as some form of interaction of an object with the surrounding medium.

Another version of a possible medium has arisen out of Quantum Electrodynamics in the form of the zero-point fluctuations, considered to be created spontaneously out of the 'vacuum' [38]. These represent a kind of medium which can interact with the charge components inside matter. Such interactions with matter have been proposed as an explanation for inertia [39]. However, as discussed in Chapter 1, this theory has difficulty in accounting for certain experiments, for which the aether makes more sense.

An aetheric model has to be able to explain inertia. Why a body travelling at constant speed feels no resistance while an accelerating one feels a strong resistance. Again we draw on the model proposed by Maurice Cooke [40]. As discussed previously, particles of matter are formed at, and tend to remain in, the nodal points in the 4D wave pattern corresponding to low vibration regions in the aether. Assuming that the 'primary' points generating the 4D waves move about at a whole range of speeds, the nodal points will also move about at those speeds. Therefore the atoms of a moving body have to catch a 'ride' on the nodal points moving at the same speed as the body. While they are riding on the nodal points the atoms will not experience any resistance. However when there is a force applied to the body in order to accelerate it, the atoms have to jump out of their existing nodes and on to other nodes travelling at the higher velocity. If it is assumed that particles have a tendency to remain or 'stick' to the nodal points, then we can see that jumping from one node to another will meet with some resistance. It is this resistance that we experience as inertia. The higher the acceleration the more nodes there are which have to be jumped per unit time, and therefore the higher the resistive force.

This mechanism is also able to explain the equivalence of gravitational and inertial mass. In the case of gravity, it is the nodes which change speed and 'drag' the atoms with them. This is experienced as the gravitational acceleration (see Chapter 5). When the atoms are allowed to move with the nodes in free fall, they experience no force, even though they are accelerating. While, with inertia, we have the reverse situation of accelerating atoms being dragged out of their companion nodes. In both cases, the forces and accelerations will be generated by the same mechanism - resistance to jumping of nodes. Hence we can understand why gravitational and inertial masses would be equivalent.

It also follows logically, that if jumping of nodes during acceleration creates a resistive force on an object, there must also be a force exerted by the object on the aether. One would therefore expect that whenever an object is accelerated, there would be created some sort of movement of the aether along the direction of acceleration. The stronger the acceleration or deceleration, the stronger the disturbance in the aether. It should be possible to detect this movement by, for example, using techniques pioneered by Dr Kozyrev. He set up equipment which was so sensitive that it was able to detect changes caused by raising and lowering a 10kg weight 2-3 meters away! He referred to the disturbances that travelled from the weight to his detectors as torsion fields. We would simply refer to them as changes in the movement of the aether. One might also consider these as longitudinal waves with a spiral motion. See David Wilcock's site [41] for an interesting account of Dr Kozyrev and his colleague's many discoveries.

Rotation

The above model of inertia can be used to explain the radial forces generated by the rotation of an object. If we consider an atom at the edge of a spinning disk, as shown in Fig 6.1(a), we can see that it starts to move in a line tangential to the edge of the disk. That line of motion will not encounter any resistance as it is moving with a node which we are assuming normally travels in a straight line.

However, this can only last for a very short period, before the forces which keep the wheel together, pull the atom towards the centre of the disk to keep it on a circular path. This means that the atom has to jump the node with which it was moving, and temporarily follow another node which is moving tangentially to the edge of the disk at the new atom position, as shown in Fig 6.1(b). Because of the rapid node-jumping along a line towards the centre of the disk, the atom will feel a force in the opposite direction.
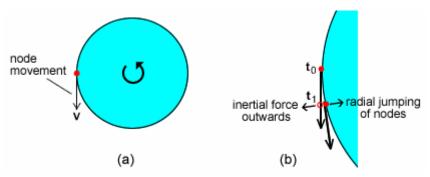

Fig 6.1 The radial node jumping for a rotating object.

We can therefore understand why a spinning object will experience a force radially outwards but no resistance to the actual rotation (ignoring friction for the moment), in accord with experience. And because the rate of node-jumping will increase with the rate of spin, the outward force will also increase with the spin.

The conservation of angular momentum and the precessional forces on a gyroscope, can be explained by a similar analysis. One of the other consequences of the above rotation model will be a force on the aether radially towards the centre of the disk, following the action and reaction argument of the previous section. Therefore, one would expect an increase in the aether pressure towards the axis of rotation.

However, during the initial spinning up of the disk, or while the rate of spin is increasing, there will also be some node-jumping along the line tangential to the edge of the disk. This is because the rate of spin is increasing, therefore the tangential velocity **v** of fig 6.1(a) is also increasing. Thus there will be a resistance to the increasing of the spin rate, consistent with observation. It also follows from this, that during the spinning up, there will be a force on the aether along a line tangential to the edge of the disk, in the direction in which the object is spinning. This would seem to be a reasonable mechanism by which we could explain entrainment of the aether around planetary bodies. Indeed any spinning body would be expected to produce a spinning aether, and it should be possible to detect such in the laboratory, with a suitable detection mechanism such as that used by Dr. Kozyrev [41].

When we combine this rotation of the aether with the pressure towards the axis of rotation, as described above, we have all the elements of a spiral motion. If we were only dealing with 3D space, the inward flowing aether would have nowhere to go (except perhaps out of the north and south axis of rotation), however in 4D space, the aether pressure towards the axis of rotation can push the aether into the 4th dimension. Therefore, one would expect that the aether particles would move a short distance in 3D space before they 'disappear' into the 4th dimension, mapping out a spiral as seen from 4D space.

We have here all the elements of a vortex flow into the 4th dimension. Similar in fact, to the electron vortex described in Chapter 2, but with an aether circulation which is centred on an axis in 3D space. We would therefore expect that any rotating object would create a transfer of energy from 3D space into the 4th dimension (or even higher dimensions).

This seems to be supported by unusual patterns observed at the polar regions of various planets in our solar system. Richard Hoagland and David Wilcock have pointed out the unusual formations observed on the outer planets of our solar system, [42] which are difficult to explain by standard theory. They also point out the many instances of unusual phenomena occurring at around 19.5^{o} latitude on many planetary bodies in our solar system. Hoagland & Wilcock attribute these to a geometrical relationship to higher dimensions. While our approach is different to theirs, it does strengthen the proposition that rotating objects create large-scale energetic flows to and from higher dimensions.

Also, as discussed in Chapter 10, we expect that when aether flows relative to matter, it slows down atomic processes, and therefore produces time dilation. In the case of rotation, aether flows are more pronounced because of the strong 4D component as discussed above. Therefore, one might expect that rapid rotation would lead to a more pronounced time dilation effect.

There is in fact experimental evidence for this. It has been reported that Bruce DePalma carried out experiments where he spun a 30 pound concrete disk at some 8000 rpm. Above the disk he suspended a Bulova Accutron watch that according to the specifications was accurate to within 1 second per year. However, the watch above the spinning disk reportedly lost 1 second in 20 minutes!

Chapter 7. Atoms and Quantum Mechanics

Atoms, Aether and 4D Waves

As outlined in Chapter 2, the present model assumes nuclear particles to be condensations of aether at points where 4D waves produce nodes of low vibration, while electrons are assumed to be aether vortexes which connect to the protons via the 4th dimension.   However, the electron vortexes are not positioned at nodal points. In the same way that atmospheric vortexes, such as tornadoes, form in air that is turbulent, it would make sense that the electron vortexes would form in regions of high aetheric vibration. That is, regions surrounding the nodes where the 4D wave oscillations are at a maximum. Thus we have an image of an atom as being composed of a nucleus sitting at a nodal point, surrounded by electron vortexes being continuously moved about in the high vibration regions around the nucleus by aetheric currents.

The above picture would imply that the first peak of aetheric vibration would occur around the 0.5 Angstrom (0.5×10^{-10}m) distance from the nucleus corresponding to the first electron orbital of the Hydrogen atom. Therefore it would make sense that the shortest 4D wave would be such as to produce a peak at the 0.5 Angstrom distance. In other words, a wavelength of around 1 Angstrom. It is also expected that there would be waves generated, whose wavelengths are multiples of the shortest wavelength. These would be the harmonics of the basic wave which combine in such a way as to produce the required low and high vibration regions surrounding the atoms.

The 4D vibrations would also be expected to create complex aether flows in 3D space in the presence of 'hard' matter such as protons and neutrons. This is supported by the observation that neutrons outside the nucleus will after a short period, spontaneously transform into a electron-proton pair. This implies that the presence of the neutron changes the surrounding aether in such a way as to promote the formation of the electron-proton pair. That such an event should occur is difficult to explain conceptually with standard models. This model might also help us to understand some unusual observations that seem to involve the reverse process of electron-proton pairs being converted into neutrons inside atoms. That is, transmutation of the elements.

There have been reports over the years of processes that produce conversions from one element to another. One example is the Marcus Hollingshead device, consisting of orthogonal spinning toroidal coils, that over a period of time change the properties of the materials inside it [43]. The material was found to have a greater proportion of neutrons than the starting proportion. The well known cold-fusion experiments are another example. One mechanism that might be involved in some of these processes is the breaking of an electron-proton 4D vortex connection, perhaps by use of high powered electromagnetic fields oscillation at resonant frequencies, leading to a dissolution of the electron-proton charge vortexes. This would effectively be a conversion of an electron-proton pair into a neutron, without having to force the electrons close enough to the nucleus to merge with the protons.

Aether and Quantum Mechanics

The standard quantum mechanical wave equation essentially describes standing waves. The reasoning being, that only standing waves can be used to describe a stable orbit of electrons around the nucleus, in the same way that a guitar string will form standing-wave patterns for wavelengths which are multiples of the string length.

The requirement of standing waves is not too different from what is required in the 4D wave aetheric model. Only nodal points that persist for many wave periods will be stationary long enough for nuclear particles to firstly condense out of the aether and secondly for the atoms to travel with the nodes.

The basic quantum mechanical wave equation is of the form:

$$\frac{\partial^2 \psi}{\partial x^2} + \frac{\partial^2 \psi}{\partial y^2} + \frac{\partial^2 \psi}{\partial z^2} = -\left(\frac{2\pi}{\lambda}\right)^2 \psi$$

The requirement of a standing wave pattern then leads to the condition that only certain wavelengths are allowed in the solution of the above equation. In the standard theory, particles are associated with a wavelength that is proportional to their momentum (p = mv), leading to the quantum nature of atoms. That is, the electrons can have only certain energy values (E) corresponding to the allowed wavelengths through the equality:

$$\lambda = \frac{h}{p} = \frac{h}{\sqrt{2m(E-V)}}$$

However, we think that it is not necessary to attribute a wave nature to the particles themselves. Perhaps we have been looking at this the wrong way? Perhaps the wave nature is not a component of the particles, but of the medium in which they are embedded, the aether.

As outlined above, the 4D wave model assumes that the electrons occupy regions of high aetheric vibration around the nodal points. Therefore in this model, the electrons are driven around the nuclear orbits by their interactions with the 4D wave oscillations of the aether. It may be that the wave function of quantum mechanics, as it applies to atomic structure, corresponds in some way to the level of vibration in the aether. This is similar to certain models in Quantum Electrodynamics which seek to explain quantum mechanical effects as a consequence of a particle's interaction with the zero-point energy fluctuations [44].

The Problem of the Non-Radiating Electron

One of the reasons that Quantum Mechanics was created in the first place, was to try and explain why orbiting electrons inside an atom, do not generate continuous electromagnetic radiation as a result of being accelerated around the nucleus, as would normally be the case for an accelerated charge. One would expect that such an electron would continuously radiate energy away, and as a result, spiral into the nucleus collapsing the atom.

The quantum mechanical explanation is, that the electron is to be described by a standing wave pattern, as described by the wave function, which only forms a stable configuration for certain wavelengths. As discussed in the previous section, this implies that the energy of a particular electron orbital is constant, since it is proportional to the wavelength. Therefore it is argued, that an orbital with a constant energy cannot radiate energy away.

This however, is an artificial explanation, it does not really explain why the electron cannot radiate energy. Even if we accept the idea implied by the uncertainty principle, that "we cannot, in principle, know where an electron is inside an atom", a localised particle orbiting a nucleus should still radiate energy, even if we do not know where the particle is. Otherwise, we have to assume that the electron is some kind of 'smeared out' amorphous substance - a philosophically ugly notion that at the conceptual level creates more problems than it solves.

Standard theory attributes a velocity for the different electron orbitals which for a Hydrogen atom is given by:

$$v_n = \frac{c}{137 \times n}$$

where v_n = electron velocity for n orbital and n = 1,2,3... the orbital quantum number

We see that for the ground-state electron (1s orbital) in Hydrogen, the speed is slightly under 1% of the speed of light. The speed decreasing in proportion to 1/n. The very notion of an orbital velocity, implies a localised particle. It is difficult to see how the concept of an orbital velocity could be applied to a 'smeared out' substance as implied by the wave function.

Inherent in Quantum Mechanics are two contradictory pictures of the electron, one a localised particle as implied by the orbital velocity and the potential energy function, the other a 'smeared out' substance as implied by the wave equation. As already discussed, we believe that it makes more sense to attribute the wave properties to the medium or aether than to the particles themselves, eliminating the contradiction. However, with this model we still need to explain why the orbiting electrons do not radiate electromagnetic energy and spiral into the nucleus.

As described in Chapter 4, our model assumes that electromagnetic radiation is generated whenever a charge is accelerated relative to the aether. One way to explain the non-radiation, is to assume that the electrons do not accelerate relative to the aether. In other words, it is possible that electrons are carried along on currents of flowing aether, similar to the way vortexes on the surface of rivers are carried along by the flowing water. This would imply that for each electron orbital, there are stable orbiting aether currents along which the electrons move. Furthermore, when the electron jumps from one orbital to another it would accelerate relative to the aether and would therefore radiate a photon, along the lines discussed in Chapter 4.

Quantum Mechanics or Fluid Dynamics?

The concept of the quantum mechanical wave equation corresponding to vibrations in some gas/liquid medium, is further supported by the work of R. M. Kiehn and others who have pointed out the similarities between the wave equation and fluid dynamics. R. M. Kiehn has shown that there exists a direct mapping between the Schroedinger wave equation for a charged particle in a magnetic field and the Navier-Stokes fluid dynamic equations for vortex motion in a compressible viscous fluid [45].

The absolute square of the wave function, which normally represents the probability of finding a particle in a given position, is then equal to the vorticity distribution in the fluid. The mapping between the two systems is complete with the following equality for the kinematic viscosity of the fluid:

$$v_k = \frac{h}{2\pi m}$$

where v_k = kinematic viscosity, h = Plank's constant and m = particle mass

Given that our aether model equates charge to an aether vortex (see Chapter 2), it would make sense that m, which is the effective vortex mass, should be equated to the inertial mass of the electron! We can then estimate the kinematic viscosity of the aether by substituting the electron's mass in the above equation. The result we get is vk = 1.1 cm^2/s.

Yuri Galaev has carried a direct experimental determination of the aether viscosity, by using an interferometer to measure the aether velocities as a function of time inside a tube [46]. His estimate for the kinematic viscosity of the aether is about 0.6 cm^2/s. This is close enough to the above calculated value to make it interesting. For comparison purposes we note that the kinematic viscosities for Water = 0.01 cm^2/s and Air = 0.15 cm^2/s.

Given also that in our model the magnetic field is seen as a flow of aether, (see Chapter 3), the above example would equate to a picture where we have vortex motion in a stream of aether, somewhat like the vortex motion which can be observed on the surface of a river.

The fluid dynamic equations also allow for the formation of connected vortex pairs. One form of these, is the so called Falaco solitons, that are readily observed in water, and which are stable for relatively long periods of time [45]. The structure of these pairs is similar, but with some important differences, to the vortex structure we are associating with charge pairs (see Chapter 2). In this case, we would have a vortex pair without the proton. In other words, an electron-positron 4D vortex link, as shown in Fig 7.1, where both the electron and positron are nothing but connected aether vortexes.
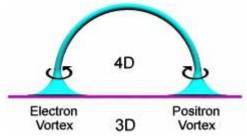

Fig 7.1 An electron-positron vortex pair.

The fluid dynamic equations can therefore describe the charge pair production that is observed in high energy physics experiments. The mapping from the quantum mechanical wave equation, to the Navier-Stokes fluid dynamic equations described above, is done for the two dimensional case. The fluid dynamics case requires a discontinuity in the medium for the vortexes to form, such as the water-air interface in the above example. The 3rd dimension contains the discontinuity.

However in our aether model, a complete description of charge requires an additional dimension. The discontinuity for the vortexes to form, is provided by the veil or membrane defining a 4D surface (see Chapter 2). The complete Navier-Stokes equation would have to include four position variables, all orthogonal to one another. The complexity of fluid motion would increase considerably, as there are more degrees of freedom in the 4D case. We could not only have rotation in an x-y plane, but also the z-w plane at the same time, where w is the 4th axis. Charles Hinton gives a good description of rotation in 4 dimensions [47]. In addition, a complete fluid dynamic description would have to include the 4D vibrations, along the w-axis, which are discussed in previous sections.

Particles or Waves?

One of the more ambiguous concepts of modern day Physics, is the particle wave duality of matter. Particles are treated as waves under certain conditions and solid objects in others. The basic dilemma is often illustrated by resorting to the double slit experiment involving electrons. If electrons are fired through a double slit arrangement as shown in Fig 7.2, the probability of detecting electrons on the back plane would show a pattern that is consistent with the interference effects which one observes with waves.
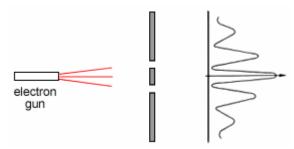

Fig 7.2. The double slit experiment with electrons.

What is even more surprising, is that if the beam intensity is reduced to such an extent that only single electrons go through the slits at any one time, the same intensity pattern will appear when a large number of hits are recorded. In other words, even when a single electron goes through the slits it behaves as if it was going through both slits and interfering with itself.

The dilemma then is, that if the electrons are to be viewed as particles confined to a small region of space, then they can only go through one slit or the other but not both. To resolve this dilemma Physics has come up with the notion that the electrons consist of some sort of amorphous extension in space, as described by the wave function, which moves through both slits and creates the interference pattern. And that when we come to detect the electrons using our instruments this amorphous 'substance' somehow collapses into the localised particle. A strange notion indeed! It leads to many conceptual difficulties and paradoxes. For example, how does the wave function know when to collapse?

The Copenhagen interpretation of quantum mechanics assumes that the wave function collapses upon observation. However the wave function doesn't know that a person is going to be reading a detector used in a measurement. We do not think it is that clever. What criterion should we use for the collapse of the wave function? One might suppose that it collapses when it, or some aspect of it, encounters a 'solid' object such as a detector, but if that is so, why does it not collapse when it encounters the object containing the slits?

As discussed above, we think there might be a more common sense interpretation of these events. Namely that the interference effects are not to be attributed to the electrons themselves, but to the wave nature of the medium. The above example is to a large extent academic, because it would not be practical to carry out this experiment. There are however, other experiments that have been carried out, which demonstrate this principle. One common example is the scattering of electrons by a crystal, such as occurs in an electron microscope. There, the scattering of electrons, or diffraction pattern, definitely displays the interference effects normally associated with waves.

However we believe that it is not necessary to attribute the wave properties to the electrons but rather to the 4D aetheric waves that surround the atoms within the crystal. The patterns of aetheric vibration will be modified by the presence of the crystalline atoms. The regular periodicity of these atoms will introduce periodic variations in the 4D standing wave patterns inside and near the crystal. Therefore, an electron fired into the crystal would not only be affected by the Coulomb forces of the atoms but also by the 4D wave patterns.

It is conceivable that the diffraction patterns we observe in the scattered electrons, are in fact due to the influence of the aetheric vibration patterns on the electrons as they pass through the crystal. The influence being such as to somehow produce an effect that is consistent with the observed relationship of the wavelength being proportional to the momentum of the incoming electrons. Similar logic could be applied to other atomic particles.

Sub-atomic Particles and Higher Dimensions

As outlined in Chapter 2, the present model assumes nuclear particles to be condensations of aether at points where 4D waves produce nodes of low vibration, in a similar way to that in which water vapour condenses into water droplets. However, we believe that in the case of nuclear particles, the aetheric particles are themselves structured. That is, the aether constituting the nuclear particles, forms a crystalline or ordered structure, rather than a liquid form as in a water droplet. In this model, the different sub-atomic particles that Physics has discovered, are a consequence of the different arrangements of the aether particles from which they are formed.

We also believe that the aether particles come in different sizes and qualities, and are therefore able to form their own sub-units, somewhat analogous to the normal atoms but much smaller. This implies that the aether particles are themselves constituted from even smaller particles in a similar way to that in which atomic particles are formed from the aether ones. If that were the case, then it would make sense that these sub-aether particles could be related to a 5th dimension in the same way that aether particles are related to the 4th dimension. That is, the aether particles would be prevented from moving into the 5th dimension by some sort of veil spanning the surface of a 5D sphere, in the same way that nuclear particles are prevented from moving along the 4th dimensional axis (see "The 4th Dimension" in Chapter 2). However, the sub-aether particles would be able to pass through the 5D veil and thus form vortexes or 'wormholes' channelling this rarefied matter in and out of the 4th dimension.

It doesn't take too much of a leap to imagine that there could be several levels down of particle sizes, each more rarefied and each corresponding to the next higher dimension as per the previous example. Until a level is reached where there exists pure consciousness, as the eastern mystics suggest. Thus we can begin to understand the statements of esoteric and eastern teachings that the manifest worlds are created and maintained by consciousness. That life is a play of consciousness.

There are some similarities between the above model and the so called 'string' theories of modern Physics. Matter is viewed as consisting of tiny strings which vibrate in different dimensions. Different modes of vibration giving rise to different particles and forces [48]. However, these extra dimensions are assumed to wrap around themselves at a very small scale, much smaller in size than atomic particles. This is the physicist's way of explaining why we do not see these extra dimensions.

However, we are suggesting here, that the extra dimensions actually extend indefinitely along the axes perpendicular to the 3D ones with which we are familiar, it is just that we are prevented from moving along these extra dimensions. We are also suggesting, that there are a number of particle size levels below the nuclear size one, in fact 7 basic levels corresponding to 7 dimensions. It is also interesting to note that in recent years physicists have been increasingly talking about vibrating membranes as the foundations of matter. Membranes spanning surfaces in higher dimensions, similar to the veil idea presented here [49].

Chapter 8. Free-Energy

Free-Energy

The idea of free limitless energy has been around for some time now. It holds the promise of solving our energy needs without compromising our environment, while alleviating poverty and suffering. We should be making free energy research a priority rather than giving it the scant support it is currently receiving. We have set out a plan that outlines our vision of how we can move closer to the goal of free energy for all in Chapter 11 the "Free-Energy Roadmap".

We must emphasise that by free-energy we do not mean creating energy out of nothing, but rather tapping into the enormous stores of energy that we believe the universe contains. The erroneous belief that free-energy implies a violation of conservation of energy laws has discouraged traditional scientists from doing any serious research in this area. The concept of free energy is however, starting to gain respectability among the scientific community, as a result of recent developments in physics dealing with zero-point energy.

As discussed elsewhere, the latest theories suggest that the vacuum contains an enormous amount of energy, only a small portion of which would be enough to supply all the world's energy needs many times over [50].

It is ironic that physicists, who would normally denounce the idea of creating something out of nothing, have little difficulty in accepting the zero-point energy concept, which is the ultimate in something out of nothing theories!   After all, we are talking about a supposed vacuum, from which emerge charged particles and energy out of nothing - courtesy of the uncertainty principle.

Even though the zero-point fluctuations are allowed by the uncertainty principle, it does not explain why they should arise in the first place. If one accepts a causal universe, then there has to be some underlying mechanism or cause that gives rise to these fluctuations. ,The uncertainty principle is a condition not a cause.

Aetheric vibrations are a much more reasonable explanation for zero-point fluctuations.

More and more scientists are trying to work out ways to tap into this zero-point energy. One of the main ideas being, that because the zero-point fluctuations impinge on matter from all sides equally, we are not normally aware of this enormous energy.   However, if one were able to create a coherence in the fluctuations, one might be able to create a net force and therefore extract energy from the vacuum.

The Casimir effect gives us a possible way of doing this. This idea has been taken up by a number of researchers - see for example, the research being done at Quantum Fields [51]. As discussed in Chapter 2, the 4D waves model presented here, has many similarities to the zero-point fluctuations. The next section demonstrates this, by showing that the Casimir effect can be explained within the context of the 4D wave model. Like the zero-point fluctuations, the 4D waves would be expected to contain large amounts of energy, it is just that we are not directly aware of this as the 4D waves oscillate along the 4th dimensional axis.

However, we do not think that the Casimir effect is the best or the easiest way to extract energy from the 4D waves. As outlined in Chapter 2, charge is viewed as an aether vortex moving into and out of the 4th dimension. There is a 4D component to charge, and therefore a coupling to the 4D waves. Thus, there is the possibility of tapping the 4D wave energy through the motion of charge. The "Free Energy and Charge" section below, examines this concept in greater detail. Another way of coupling to the 4D waves is through the movement and rotation of matter, in particular the spiral motion. We look at this in more detail in the "Free Energy and the Spiral" section below.

4D Wave Explanation of the Casimir Effect

It has been shown experimentally, that when two metal plates are separated by a short distance (of the order of a micro meter) there exists a force that draws the two plates together. This has been attributed to the effects of zero-point energy fluctuations as described by Quantum Electrodynamics. We can show however, that this effect can readily be explained within the context of the 4D wave model presented here.

The best way to demonstrate this effect, is through a computer simulation. Fig 8.1 shows the arrangement used in the calculation:
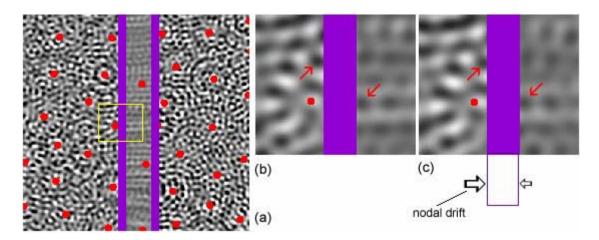
Fig 8.1 Demonstration of the 4D wave Casimir effect.
(b) is an enlargement of the yellow area of (a).
(c) is the same area a short time later
(about 20% of the wave period).

The purple slabs represent two metal plates surrounded by a more or less random distribution of spherical wave generators represented by the red dots. The pattern of white and dark areas show the interference pattern produced by superimposing all the individual wave generator contributions. As with other examples, the white and dark regions represent the amplitudes of movement along the 4th dimensional axis and not motion in 3D space. The 4D wave amplitudes produced by the generators or primary points are assumed to drop off as the inverse of distance in 3D space (1/r variation), which is consistent with energy-conservation principles.

Also, it is assumed in the above example that there is some attenuation of the 4D wave amplitudes as they pass through a plate. This gives rise to the 'duller' region between the plates in Fig 8.1(a), signifying lower average vibration amplitudes in that region. The result of all this will be a greater wave contribution from the side of the plate that is facing away from the second plate as compared to the side facing towards the second plate. Consequently, there will be a drift of vibration nodes towards the plates from the outside which is greater than the drift towards the plates from the inside region, as shown in Fig 8.1(b) & (c). As the red arrows show, there is a noticeably larger drift of nodes from the left (outside) than from the right (inside).

This is similar to the drift of nodes surrounding a planetary body as discussed in Chapter 5. If we assume that the particles have a tendency to 'stick' to low vibration nodal points, as outlined in the previous sections, we can see that this nodal drift will produce a force tending to push the plates together. This is very similar to the way a drift of nodes produces a gravitational force between two bodies. Gravity could be thought of as a long range Casimir effect, or vice versa.

Fig 8.2 shows what happens when we increase the separation of the plates of Fig 8.1.
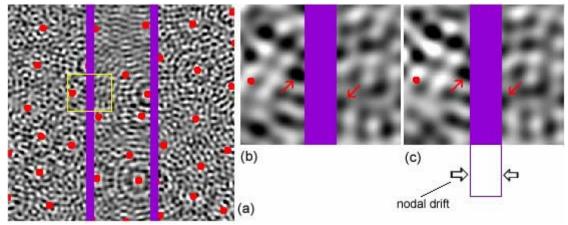

Fig 8.2 As for Fig 8.1 but with double the plate separation.

Increasing the plate separation also greatly increases the number of wave generators within the plates, thereby creating a more equal contribution of wave amplitudes from the outside and inside of a plate. As Fig

8.2(b) & (c) show, this creates a much more equal drift of nodes from both sides of a plate. The result is that there is a greater balance of forces on both sides of a plate, and therefore, a much smaller force tending to push the plates together, in accordance with experiment.

There are similarities between the 4D wave and zero-point energy treatments of the Casimir effect. In Qunatum Electrodynamics also, there is a greater density of zero-point fluctuations outside than inside the plates, leading to a force that pushes the plates together. However, the way this imbalance of wave strength comes about is different in the two cases.

In standard Quantum Electrodynamic theory, the conducting plates give rise to boundary conditions on the surfaces, which means that only the zero-point fluctuations that have a wavelength of a half integral multiple of the plate separation, are allowed within the plate region. This gives rise to a greater density of fluctuations outside than inside the plates. The Qunatum Electrodynamic explanation of the Casimir effect, implies conducting plates. The 4D wave theory presented here however, predicts a Casimir type force for plates of any material. This provides a direct test of the 4D wave model.

Free Energy and Charge

As already mentioned, our model of charge as a 4th dimensional vortex, means that it has strong coupling to the energy of the 4D waves, and therefore makes it a prime candidate for tapping into these enormous stores of energy. Indeed, our model holds that it is the action of the 4D waves that drives the electrons in their atomic orbitals.

In fact, the vortex flow itself, would contain a lot of energy, maintained by the 4D aetheric vibrations, in the same way that tornadoes contain a lot of energy. Magnetic aether flows are in the same category as they are a direct result of moving charges. Normally one cannot extract free-energy out of charge flow as these processes are cyclic in nature, what you gain in one part you lose in another. However, if one could create an asymmetry in the cycle, it is conceivable that one could extract useful energy directly from charges. Tom Bearden [52] and John Bedini [53] seem to have been able to achieve just that.

One common theme that we observe with many situations that produce anomalous energy outputs or forces, is the idea of rotation combined with translation. One example of this, is the anomalous effects observed with plasmas under certain conditions. The Russian physicist Chernetskii has reported that, when ions are forced to undergo a cycloid motion within a plasma device, anomalous energy outputs have been observed [54].

As Fig 8.3(a) illustrates, the basic cycloid motion is the path traced by a point on a wheel rolling in a straight line. This is in effect, a combination of rotation plus a translation perpendicular to the rotation axis. Precession is a particular case of cycloid motion where the translation follows a circular path. We could also translate along the axis of rotation which would give us the helical spiral motion, as shown in Fig 8.3(b). The vortex is a particular case of the helical spiral where the radius of rotation decreases with the translation, as shown in Fig 8.3(c). The most general motion would have both of these translations combined.
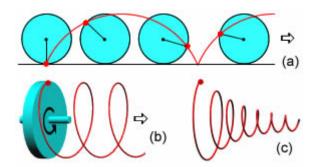
Fig 8.3 Different forms of rotation plus translation.
(a) Cycloid - translation is at right angles to the rotation axis.
(b) 3D Spiral - translation is parallel to the rotation axis.
(c) Vortex - as for (b) but with a decreasing radius of rotation.

So perhaps it is understandable that cycloid motion of charges produces anomalous effects in plasmas, our model of charge, in fact involves a kind of rotation of aether particles represented by the 4D vortex. It is

conceivable that this type of motion creates a coherence in the forces that the 4D waves exert on the charges, giving us a way of tapping into the energies of the 4th or even higher dimensions.

This is further supported by other cases where cycloid motion has produced anomalous forces. Prof. Laithwaite has discovered, that when a spinning gyroscope is forced to undergo a cycloid type motion, it exhibits inertial/gravitational anomalies [55]. As discussed in Chapter 6, a spinning body is expected to generate a 4D aether vortex centred around the rotation axis. This however, is similar to what happens in the case of a moving charge. As discussed in Chapter 3, a moving charge is assumed to generate a 4D vortex with a preferential rotation around the direction of motion. Given the similarities of aether motion in these two cases, it is perhaps not surprising that both charges and gyroscopes produce anomalous effects when forced to undergo cycloid motion.

An outstanding example that has produced free-energy outputs, as well as antigravity, is the Roschin & Godin device [56], itself a modified version of the Searl SEG machine [57]. It also makes use of cycloid type particle motion within the device.

The above ideas relating to cycloid motion of charge, would suggest that an arrangement of wires or conductors that forces electrons to flow in a cycloid or spiral motion, should produce anomalous effects. The same outcome could also be achieved by a simple arrangement of conducting wires that is forced to rotate or move in irregular paths.

A natural extension of that, is to the area of magnetic fields. Given that magnetic fields are generated by moving charges, we already have a form of rotation and translation of the aether. One would expect therefore, that rotating or moving magnets in a non-uniform way, would generate anomalous effects. There are plenty of examples of such anomalies in magnetic devices that have been reported by various researchers. Some examples are, the Adams motor [58], the Newman device [59], the Johnson motor [60], and the Lutec1000 [61].

Free Energy and the Spiral
Following on from the previous section, we examine the 'rotation plus translation' idea for the spiral case. Simultaneous rotation and translation, produces anomalous effects, not only with moving charges, but also with neutral macroscopic objects. The spiral motion (Fig 8.3(b),(c)) in particular seems to be involved in many cases.

A prime example of this is provided by the spinning ball experiments of Bruce DePalma [62]. He projected two metal balls upwards inside a vacuum container, one spinning at some 20,000 rpm and the other non-spinning, and observed them to detect any differences. He discovered that the spinning ball moved higher and further and also fell faster than the non-spinning one, as shown in Fig 8.4. This effect has since been verified by other researchers [63].
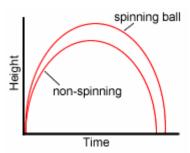

Fig 8.4 DePalma's spinning ball experiment.

Here we have a rotation plus translation of particles forming a spiral motion that produces effects defying standard theories. From an aether particle perspective we have a 4D aether vortex being moved parallel to the axis of rotation. One might therefore expect that keeping the rotating body still, and moving the aether along the axis of rotation, would also produce some sort of anomalous energy effect. Although the two cases are not exactly the same, there is a symmetry between the two arrangements. Given that our aether model assumes the magnetic field to be a movement of the aether, see Chapter 3, it would make sense that a magnetic field applied along the axis of rotation of a spinning body, would produce some such effect. This has in fact been observed in the devices invented by Bruce DePalma, which are based on the Faraday disc [62]. The basis of these devices is a rapidly spinning metallic disc placed between the poles of magnets, as shown in Fig 8.5.
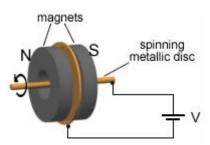
Fig 8.5 Faraday disc. The principle behind DePalma's N-Machine overunity generator.

This arrangement produces a voltage difference between the axis and edge of the rotating disc. DePalma was able to generate free-energy from such a device. Paramahmsa Tewari has also demonstrated a free-energy device based on a variation of the Faraday disc principle [64].

Another good example of the spiral principle is the water vortex effect observed by Schauberger [65]. He claimed that when water was forced to undergo a vortex type motion, by the use of spiralling tubes, it caused a blue glow to appear at the centre of the vortex, as well as creating excess energy outputs. An extension of the Schauberger vortex concept is the water vortex propulsion device designed by Alexander Frolov [66], based originally on Spartak Poliakov's ideas. He demonstrated an 'inertialess drive' that converts rotary vortex type motion into a linear force. We also note that Arie DeGeus has been able to obtain free-energy outputs, among other unusual effects, by use of a plasma vortex [67].

From the perspective of the aether model, there are a number of factors that come into play in determining the forces and energies involved in spiral motion. There is the 4D aether vortex induced by rotational motion, as described in Chapter 6, giving rise to etheric pressure towards the axis of rotation. There are forces involved with node jumping due to rotation and acceleration. Also, if we assume that the aether is the carrier of 4D waves, then one would expect that a moving aether would create phase shifts in the 4D waves, which in turn would give rise to nodal shifts. The details of the forces and interactions are complex, however we would say that for anyone interested in tapping into the free-energy of higher dimensions, rotation plus non-uniform translation or spiral motion is a good place to start.

It is interesting to speculate on the possibility of the spiral being a prime mechanism by which living things are energised from higher dimensional sources. We think this mechanism applies to all living things, including plants. If one considers the flower for example, we marvel at the rapid burst of growth and development from bud to full flowering in all its beautiful patterns. We think that there is more to this than just chemical reactions. We believe that some form of energy spiral at the flower connects it to higher dimensional energy patterns.

Chapter 9. Anti-Gravity

Experimental Evidence

A number of experiments have demonstrated antigravity effects. The most notable of these, because of it's rigor and level of detail, is the Roschin & Godin device [68], itself a modified version of the Searl SEG machine [69]. It consists of sets of rapidly rotating magnets that have been shown to reduce the weight of the whole apparatus by a significant amount. The self-rotating magnets have to be slowed down to prevent a runaway situation occurring which would cause the device to fly into the air, were it not for the fact that the centrifugal forces would damage the device. Also, electromagnetic and temperature anomalies have been observed when the device is in operation.

Another example of rotating magnetic fields producing anti-gravitational effects is the Hamel device [70]. It consists of two counter-rotating wheels of magnets stacked three levels high. This is also reported to be a self-spinning device which if allowed to rotate freely speeds up until it reaches a point where the whole unit shoots up into the air, at the same time, producing electromagnetic anomalies.

Another interesting gravity-shielding effect was demonstrated by Eugene Podkletnov's rapidly rotating superconducting disk [71]. When the disk is spun at some 7,000 rpm in the presence of an external magnetic field, anything situated above the disk loses weight.

However, weight reduction has also been observed with simple rotation of objects. Hideo Hayasaka and Sakeo Takeuchi have reported a weight reduction in rapidly rotating gyroscopes [72]. Interestingly, the weight reduction occurs only for clockwise rotation.

It would seem that the strongest effects are produced by rotating magnetic fields. This would make sense based on our aether model, which assumes magnetic fields to be movements of the aether. Thus for a rotating magnet, we would have a combination of two movements of the aether, giving a more dynamic motion.

There have also been a number of experiments involving high voltages which have shown weight-reduction, among other unusual effects. Some examples of these are the Townsend Brown gravitor [73] and the Kowsky-Frost quartz crystal levitation experiment [74]. The most notable of these however, is the work of John Hutchison who has demonstrated objects being raised into the air by using a combination of high voltages and radio frequency beams [75].

4D waves, Rotation, Magnetism and Anti-gravity

How do we explain these effects from the perspective of the aether model? One of the more interesting clues in the above examples is that only clockwise rotation produces a weight loss. The Roschin-Godin device clearly shows that a clockwise rotation produces a weight reduction and an anti-clockwise rotation a weight gain! Why should this be? Standard theories are unable explain this difference.

According to the aether model presented here, rotation generates an aether vortex into the 4th dimension (see Chapter 6). Given that gravity, according to this model, is essentially a 4D wave phenomenon, it suggests that left/right spin difference is a 4th dimensional effect. The most obvious variable of the 4th dimension is the direction of aether flow, negative to positive or vice versa along the 4D axis. Therefore it is plausible, that a clockwise rotation makes the aether flow in one direction along the 4D axis, and anti-clockwise in the opposite direction along the 4D axis, thereby producing opposite effects for the two spin directions. There are two ways in which an aether flow into the fourth dimension could cause a reduction in gravitational force:

The first involves the shift of 4D nodes which results from the aether movement. Given that the aether is the carrier of the 4D waves, a strong flow of aether will cause a phase shift in the wave fronts and therefore the pattern of high and low nodes of vibration. It is conceivable that the aether flow would cause the gravitational nodes discussed in the first section to drift at a different rate towards the planetary body, and therefore to change the force of gravity. The nodes might not only slow down, but be shifted sideways, changing the force again. Note that the force of gravity does not need to be completely cancelled in order for an object to be lifted into the air. There is always present, the centrifugal force due to the earth's rotation which is overshadowed by the stronger gravitational force. One need only reduce the gravitational influence below that of the centrifugal force and the slingshot action of the rotating earth will shoot an object into the air.

More generally, if a way could be found to manipulate the nodes, one could manoeuvre a craft at high speed. That is, the craft could be accelerated or have it's direction changed without the occupants feeling any inertial forces, in the same way that a free falling object moving with the gravitational nodes will not experience any force even though it is accelerating.

The second way that an aether flow could cause a reduction in weight is by reducing the resistive forces that an atom feels when jumping nodes. As discussed in Chapter 5, the gravitational force according to our model, results from the atoms jumping from one low aether vibration node to another, brought about by the nodal drift near a planetary body. One would expect that the resistive force is determined by some form of interaction of the atoms with the surrounding aether. It is therefore reasonable to expect that a moving aether, in particular a vortex, would change in some way, the atom-aether interaction responsible for the gravitational force.

Furthermore, in our model, the gravitational force and inertial resistance (see Chapter 6) are caused by the same mechanism of node jumping. Therefore this model predicts that if this mechanism is involved in weight reduction, one would also experience a reduction in the inertial force, or inertial mass, of the object. There is evidence of this happening with the Marcus Hollingshead device, which consists of orthogonal spinning toroidal coils constructed from bifilar windings [76]. When the unit is in operation it not only causes weight reduction but loss of inertial resistance as well.

Antigravity and High Voltage
It has been shown by several experiments, that high voltages, usually over 100kV, can create unusual gravitational and inertial effects. Many unusual effects have been observed with the Townsend Brown 'gravitor' experiments [73]. One example of this was that the motion of the unit, (a kind of electrified pendulum), was found to depend on the position of the major planets!

The Kowsky-Frost quartz levitation [74] and the Hutchison effect [75], both involve high DC voltages, together with oscillating electromagnetic fields. There are many examples on John Hutchison's website, of all types of objects, including heavy ones, rising into the air. Interestingly, one example involves water rising out of the cup that contained it. The cup did not get affected - suggesting that the Radio Frequency waves only create the correct effect with materials whose internal processes are in resonance with the frequency of the RF oscillations.

From an aether model perspective, we can perhaps begin to understand some of what is going on, by resorting to the concept of charge being a 4D aether vortex. A high voltage plate for example, would contain many little vortices whose combined effect would be to produce a macroscopic region of aether flow into the 4th dimension. Although a little different to the rotational and magnetic aether vortices discussed previously, one would expect that this aether flow would also create a shift in the 4D wave patterns which are responsible for gravity. One would therefore expect high voltages to influence the gravitational force. However, from the above two examples we see that the high DC voltage is not sufficient in itself to produce a strong anti-gravitational effect and the oscillating electromagnetic field is obviously an important component of this process.

One would imagine that the Radio Frequency fields create, through some sort of resonance effect, a significant change in the electron orbitals of the substances it affects. That such a strong effect is possible, is attested to by the fact that this process is able to cold-melt metals, as illustrated in a number of photographs [75]. We therefore theorise, that this internal change also affects the aether resistance to atomic node jumping, as discussed in the previous section, thereby reducing the force of gravity. This, combined with the high voltage, produces the desired effect.

One consequence of this argument is, that if we were to apply strong electromagnetic fields of the correct frequency, or combination of frequencies, to an object, we should be able to produce a weight reduction even without the DC voltages. Alternatively, a combination of a strong static magnetic field and alternating electrostatic fields could achieve similar results. There is a lot of scope here for further investigation.

Chapter 10. Relativity

Given the important role that relativity has played in the rejection of the aether concept by mainstream science we examine here in some detail relativity from an aether perspective.
We show that many of the contradictions of standard relativity, such as the twin paradox, can only be satisfactorily resolved by assuming a medium that transmits light.

What is Wrong with Relativity?

When one looks into the matter carefully, one discovers that there many problems with Einstein's theory of relativity, both at the conceptual level and experimentally. In an outstanding piece of work, Milan Pavlovic has carefully examined Einstein's original special relativity papers and found them to contain many inconsistencies and questionable assumptions [77].

Further he looked at the experimental evidence used to justify the special theory of relativity, such as the Michelson-Morley experiment, the Doppler effect for light, Fizeau's light-through-water test, and the aberration of starlight. He showed that most of these could be understood in non-relativistic terms or with the assumption that the earth entrains the aether.

Other objections to the theory have been raised by various scientists over the years, see for example Burniston Brown's classic article [78] which takes a critical look at the special and general theories of relativity, as well as the Marcus Coleman article [79] which catalogues objections by well known physicists and mathematicians.

Those who have looked into the matter [80] have documented more than 3,000 articles published in scientific literature that criticise the special theory of relativity. Articles which have been largely ignored or conveniently swept under the carpet. Experimentally too, there are disagreements with Einstein's relativity. One of the postulates on which the special theory of relativity is based, states that the speed of light is constant for any observer. However a number of experiments contradict this, for example Dayton Miller's [81] and Yuri Galaev's [82] Michelson-Morley type experiments that produced a definite positive result under certain conditions. If the postulate was correct, no Michelson-Morley type experiment would produce a positive result. Chapter 1 discusses the 'null' result of the Michelson-Morley experiment and how it can be explained within the context of an aether.

As well, there is experimental evidence emerging that the speed of light might not be so constant after all, [83]. Also, the experiments of Eugene Podkletnov and Giovanni Modanese suggest that it is possible to transfer a signal faster than the speed of light. They used a high voltage discharge mechanism to generate what they refer to as a gravity wave impulse [84]. This impulse was found to travel through thick metal and brick walls, and was able to affect objects a long distance away from the source. More important to the present discussion, is the fact that they measured the beam speed to be more than 60 times the speed of light!

See also the following link [85] for a clear and concise description of the conceptual difficulties inherent in special relativity. This site also provides a good description of several experiments which are relevant to the aether versus special relativity debate. Other evidence exists that supports the existence of a medium which transmits light, see for example Webster Kehr's work [86].

However, in the author's opinion, it is the unresolved contradictions around the twin paradox and time dilation which provide the most compelling argument against special relativity. They highlight contradictions that make the precepts of special relativity untenable. Relativity predicts that time slows down for a moving object relative to a stationary observer. That is, if a moving clock is brought back to its starting position it should show a difference in the time registered compared to a stationery observer. The slowing down of travelling clocks has been confirmed by use of atomic clocks, etc.

One cannot really explain it on the basis of the finite speed of light, or issues of simultaneity, etc., because the travelling clock could easily retrace its steps to end up in its starting position without any communication or interaction between the two clocks. And given that special relativity postulates that all reference frames travelling at constant speed are equivalent as far as the laws of physics are concerned, there is no real reason why the two clocks should move forward at different rates. There has to be something different about the travelling clock that makes it 'tick' more slowly. One might suppose for example, as standard theory does, that the explanation lies in the fact that the travelling clock has to first accelerate to reach a certain speed, and it is this acceleration which 'causes' the slowing down of the travelling clock.

However this is inadequate, as the total time difference is dependent on how long the clock moves at constant speed and not on how that speed was reached, which is dependant on the acceleration. In other words, we could have two moving clocks each of which receives the same acceleration and reaches the same velocity but where one travels at that constant velocity for much longer than the other before returning. This gives rise to the situation where the two clocks would show different times relative to the stay at home clock even though they underwent exactly the same acceleration.

Is time dilation caused by acceleration, or relative motion? If the time difference were due to the acceleration, then the relativistic formula should be expressed as a function of the acceleration and not a function of the velocity.

We can also consider a variation of the twin paradox thought experiment. Suppose we have two identical twins, having identical rockets, who both accelerate in opposite directions for the same amount of time and then return back to their original positions. Special relativity predicts that each twin will see his brother as being younger. The standard twin paradox is explained away by pointing to the fact that one twin is accelerating and the other is not. However in this example both twins experience the same accelerations and velocities - the paradox still remains.

In any case it is not too difficult to come up with a scenario where the acceleration is completely taken out of the picture and special relativity still predicts a time difference [78]. When the equations describing time dilation have no connection with its supposed cause (acceleration) is it any wonder that we encounter paradoxical situations?

In the next section we will look at time dilation from an aether perspective and show that the twin paradox can only be satisfactorily resolved by assuming a universal reference frame or a medium that transmits light. The introduction of the aether brings back common sense to relativity, sparing us the need to perform mathematical contortions to make the speed of light be a constant for all observers.

Aether, Time Dilation and Special Relativity

Time is a consequence of the rate of change of processes which are used to measure it. The most plausible explanation of time dilation is that the slowing down of the travelling clock is caused by it's interaction with its surroundings. In particular a slowing down of these internal processes with motion relative to an underlying medium such as the aether. In a Caesium atomic clock for example, it would be the emission frequency of a particular electron orbital in the Caesium atom. We should really be talking about clock dilation rather than the dilation of time as is normally interpreted from special relativity. Time has no meaning divorced from some cyclic process whose rate of change is used to measure it.

In deriving the time dilation effects for an aether case, we will consider the example that is often used in standard texts on relativity, the motion of a light clock. The light clock in its most simplified form, consists of a source and detector of light at one end of a rod, and a mirror at the other, as shown in Fig 10.1(a). The time it takes light to travel from the light source to the mirror and back again will be our unit of time or 'tick' of the clock.
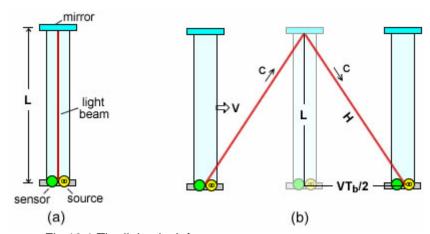

Fig 10.1 The light clock for two cases:
        (a) The clock is stationary relative to the aether.
        (b) The clock moves to the right at velocity v relative to the aether.

We consider the two cases where the clock is stationary, shown as situation (a) in Fig 10.1, and when it travels at velocity **v** relative to the aether, at right angles to the clock axis, shown as situation (b) in Fig 10.1. Given that light will always travel at speed **c** relative to the aether, we have the following clock times (1 tick) for stationary and moving cases:

(a) $T_a = \dfrac{2L}{c}$

        where **L** = length of the clock and **c** = speed of light

(b) $T_b = \dfrac{2H}{c}$

        where **H** = diagonal length given by

        $H^2 = L^2 + (vT_b/2)^2$

It can be shown that the above values lead to the following relationship between the two clock times as a function of the velocity:

$$T_b = \frac{T_a}{\sqrt{1 - \left(\frac{v}{c}\right)^2}}$$

The proportionality factor being given by the standard relativistic factor - a factor that has its origins in electromagnetism and was first derived by Lorentz. So for a travelling light clock, time as measured by each tick of the clock would actually slow down compared to a stationary one. It is a real effect that follows directly from the constancy of light speed relative to the aether (independent of the speed of the source), and the fact that light has to travel paths of different length through the aether to complete one cycle of the clock (red lines in Fig 10.1).

The derivation of the formula is similar to the standard theory, the difference being that in the present example the speed of light is constant relative to the aether whereas in the standard theory it is assumed to be constant relative to any observer. This assumption leads to the contradictions inherent in the standard theory, such as the twin paradox example discussed in the previous section.

In the aether model we have no such contradictions. Time dilations only occur for the clock moving relative to the aether, so the twins will both agree on the differences registered by their light clocks. In the case where both twins travel equal amounts relative to the aether they will both time dilate by the same amounts, so their clocks will show the same time, which would be different to a stationary clock, when they get back together.

The next question that arises is, will the time dilation derived above apply to any type of clock, and any type of process? Will the travelling twin actually look younger, if enough time passes? A clock can be anything that has a cyclic process. Let us consider one of the simplest types of clock, a rotor consisting of a ball (green) at the end of a rigid arm that rotates at a constant angular speed, as shown in Fig 10.2.
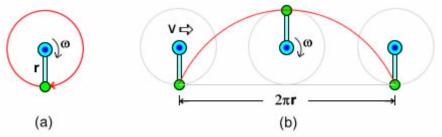

(a)   (b)

Fig 10.2 The rotor clock for two cases.
    (a) The clock is stationary relative to the aether.
    (b) The clock moves to the right at velocity **v** relative to the aether.

Doing the same analysis as for the light clock, we have that the time it takes for the ball to complete one cycle of rotation will be our unit of time measurement. Again we compare the case where the clock is stationary, Fig 10.2(a), with the one where the whole unit moves at velocity **v** relative to the aether, Fig 10.2(b). The rate of rotation is assumed to be the same for the two cases.

For ease of analysis we will assume that **v** in situation (b) above, is the same as the rotational velocity of the ball (equivalent to cycloid motion), however a similar argument will apply for any **v**. For the case (a), one tick of the clock will correspond to the circumference, given by $2\pi r$, divided by the velocity of the rotating ball.

Given that the rotation rates are the same for both clocks, one tick for clock (b) will correspond to the case where the clock moves a distance $2\pi r$, Fig 10.2(b), equivalent to the distance the rotating ball moves in case (a). We can see from Fig 10.2(b), that in the equivalent time, the rotating ball of (b) will have travelled a larger distance through the aether (red line) compared to case (a).

Therefore, if we had an equivalent condition as for the light clock that the rotating ball moved at a constant velocity relative to the aether we would again have time dilation. The larger the value of **v** the greater the ball path compared to the stationary case (a). However, clearly the ball will not travel at a constant velocity relative to the aether. The rigid arm will sometimes pull the ball through the aether faster and sometimes slower, depending on which part of the cycle it is on.

But we do not need to be concerned about this, because the fact that the rigid arm rotates at the same rate for both clocks, means that the clock cycles must also be the same for both. Therefore we can conclude that for a rigid rotating clock there will be no time dilation.

What happens if the arm is not rigid, such as for an electron spinning around an atom? In that case there can certainly be a slowing down of the rotating electron, at least in parts of the cycle, leading to time dilation. It is difficult to determine exactly what should happen as we do not know the details of what goes on inside an atom, however we would expect some type of disturbance of the electrons when an atom moves through the aether.

This would seem to be supported by experiments [87] which showed differences in the forces between strongly charged bodies when moving as compared to the stationary case (see also Chapter 3). For a neutral object, the effects of moving negative charges will be cancelled by the positive charges on a macro scale. However, at an atomic scale, the charges are separated and one would therefore expect small differences in the forces within an atom for moving objects compared to stationary ones.

Various time dilation experiments involving such things as atomic clocks, particle decay rates, etc., show that there is indeed time dilation at the atomic level. Furthermore, that atomic time dilation seems to follow the standard relativistic formula, as for the light clock discussed above. Time dilation at the atomic level is in fact an additional argument for the existence of the aether. From the rotor clock arguments above, if there were no aether or medium there would be nothing to affect the motion of the electrons and therefore the times for each cycle of the clock. Given that special relativity postulates that all reference frames travelling at constant speed are equivalent as far as the laws of physics are concerned, without something like an aether there could not be any time dilation at the atomic level!

It also follows from the above argument, that the reverse situation of a stationary object and a moving aether should also produce changes in the internal processes. The aether movement through an atom should interact in some way with the vortex motions that we are associating with charged particles. One would therefore expect that motions of the aether relative to an object, such as when surrounding objects are accelerated or decelerated (see Chapter 6), should have an affect on a stationary object's internal processes and therefore time as recorded by that object. There is support for this with the work of Dr. Kozyrev and other Russian researchers [88] which showed that the torsion fields, discussed in Chapter 6, have produced changes in time measurements. In fact the torsion fields were referred to as 'time flow energy' by Dr. Kozyrev.

Relativistic Mass and E=mc²

Probably the most recognised equations in physics, and which have made Einstein famous, are the mass-energy conversion equations as follows:

$$E = mc^2$$

$$m = \frac{m_o}{\sqrt{1 - \left(\frac{v}{c}\right)^2}}$$

where **E** = energy content
  m = relativistic mass

m_o = rest mass
v = velocity of particle
c = speed of light

These state that mass and energy are basically the same thing - one can be converted into the other. If a body gains energy, its mass is increased, and vice versa. However, Einstein was not the first to come up with these formulas. Poincare derived the $E = mc^2$ formula prior to Einstein based on arguments relating to the way electromagnetic waves interact with particles and conservation of momentum principles, which had little to do with relativity.

Also, Lorentz derived the mass increase with speed formula for an electron, prior to Einstein. He derived this on the basis of electromagnetic theory and the assumption of the existence of an aether. The picture emerging at the time, was that there were two components of the electron mass, the rest mass (m_o) and an electromagnetic mass (m_{elec}): **$m = m_o + m_{elec}$**

It is well known in electrodynamics, that a moving charge creates a magnetic field which then resists further attempts to increase its speed. It is this resistance or inertia that was then considered to constitute the electromagnetic mass. That is, this resistance was thought to be responsible for the increase of the electron's mass with speed over and above the rest mass. This also makes sense from the perspective of our aether model. We are assuming that when a charged particle moves relative to the aether, it creates a type of rotation of the aether around the direction of motion (see Chapter 3). It would make sense then, that this rotation would change the particle's ability to move through the aether.

The kinetic energy of motion is converted into the energy of the rotary aether motion, or the electromagnetic field in classical terms. That rotary aether motion or energy, can be converted back into kinetic energy, or alternatively given off as light, when the electron slows down relative to the aether. The conversion of energy to electromagnetic mass and vice versa can be shown to be consistent with the $E = mc^2$ formula using classical arguments having little to do with special relativity.

The question then arises - what about the rest mass? Einstein's contribution was to assume that all mass, rest and electromagnetic, can be converted according to $E = mc^2$. He presented a relativistic derivation of these equations. However, Milan Pavlovic has carefully analysed Einstein's derivation in his original 1905 paper and found many logical inconsistencies and even mathematical errors, some of which were first pointed out by Ives [89] in the 1950's.

This makes it very doubtful that a purely relativistic argument can be used to derive the energy conversion formulas. This is especially so, since these formulas can be derived non-relativistically (as Milan Pavlovic has shown in some detail [90]).

A further argument against Einstein's relativistic mass-energy equivalence principle, is provided by electron-positron annihilation. That is, where an electron and a positron combine to annihilate each other,, leaving a burst of light energy that accords with the $E = mc^2$ equation. This is normally considered to constitute the best proof of the correctness of Einstein's theory. However, on closer examination, we find that this is not the case. Milan Pavlovic has shown [91] that the kinetic/electromagnetic energy, resulting from electrostatic attraction, of the electron-positron pair just before their collision, (assuming a nominal electron radius derived from electromagnetic theory), is close to the energy of the emitted light given off after the annihilation. This strongly suggests, that the energy of the emitted radiation is due to the electromagnetic mass component of the electron-positron pair, rather than their rest masses as is normally assumed. Therefore, if both the electron and positron had their rest masses (2x~0.51MeV) converted to energy, we would expect the emitted light to have twice the energy than is observed, equivalent to the rest energy plus the electromagnetic energy. Certainly, it should be greater than is observed. So we have to conclude that Einstein's theory does not apply to electron-positron annihilation.

However, the notion that the energy of the emitted light in an electron-positron annihilation is solely due to the electromagnetic mass, has its own difficulties. If that were the case, the electron and positron should not disappear from the scene! In order to get around this problem, Milan Pavlovic has postulated that the electron and positron do not get annihilated, but form a bound pair which stays around until something like a high energy photon breaks them up to liberate the original particles [91].

However, this model has its own problems which only get worse when one considers the annihilation of a proton-antiproton pair, as there is more mass to account for after the 'annihilation'. An even more difficult

problem with the proton-antiproton pair, is that the energy of the emitted radiation from an 'annihilation' is about 2,000 times greater than with the electron-positron case. Given that the proton charge is the same magnitude as for the electron, the electromagnetic mass of the proton-antiproton collision should be about the same as for the electron-positron one. Therefore, if the emitted light energy is due solely to electromagnetic mass conversion, the light energy should be about the same as for an electron-positron annihilation. Clearly, there is something else going on in these processes. We would like to present an alternative explanation, consistent with our aether model, that gets around these difficulties in a natural way.

Firstly, the electron-positron annihilation can readily be shown to be consistent with our aether model. As described in Chapter 2, the electron is viewed as a vortex into the 4th dimension which creates a preferential aether rotation around the direction of its motion in 3D - the rotation being equated to the magnetic field. The positron is the same as the electron but with the spin directions reversed.

Therefore, in an electron-positron annihilation we have the two particles both creating magnetic type aether spins in the same direction. This is because, although their charges, and therefore spin directions, are normally opposite they are moving in opposite directions with the result that they will both spin the aether in the same direction around a line joining the two particles, as shown in Fig 10.3. The electron and positron will accelerate towards one another under the influence of the electrostatic force, and will therefore create a rapidly increasing rate of rotation of the aether just before the collision, (bearing in mind that there is a 4D component to the aether rotation).
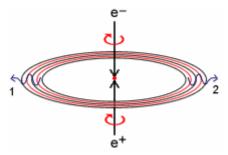

Fig 10.3 Electron-positron annihilation.

In accordance with our model for the creation of a photon, (see Chapter 4), this rotational aether disturbance should give rise to an expanding photon ring, as shown in Fig 10.3. Note that, if our photon model is correct, the two photons moving in opposite directions, that are normally detected with electron-positron annihilation experiments, are not really two separate photons but the opposite ends of an expanding photon ring, as shown in Fig 10.3.

Because the 4D aether vortexes are spinning in opposite sense for the electron and positron, the two will simply cancel each other out when they meet, and will, in fact, be annihilated from existence, leaving nothing but the aether rotational disturbance occurring prior to their collision.

Therefore, our model is consistent with the notion that it is the electromagnetic mass component that is converted into the energy of the emitted radiation. What happens to the rest mass is not a problem in this model, the two particles or 4D vortexes simply cancel leaving no excess energy. There is in fact no electron rest mass as such. What are termed rest masses are really inertial masses which only show up upon acceleration, or the effective vortex masses as discussed in Chapter 7.

The situation is a little different with proton-antiproton annihilations. In our aether mode,l the proton is considered to be a condensation of the aether particles into a solid like state, somewhat like a liquid to solid transition. The antiproton would simply be a proton which has an electron type vortex associated with it, rather than the normal positive charge version. The proton would therefore require some minimum energy input, in order to expand back to the normal, more rarefied aether state, somewhat like a solid to liquid transition.

We postulate that the energy of the proton-antiproton collision, would be sufficient to re-expand the two particles from a solid to the more rarefied state of the surrounding aether. The two particles would cease to exist. We believe it is this sudden re-expansion of the condensed aether particles that creates a disturbance of the surrounding aether giving rise to more energetic photon emission than can be explained by the electromagnetic mass alone.

Unlike the electron, the proton does have a rest mass in the sense that there is a 'substance' there that is converted to energy. Experiments with proton-antiproton annihilations suggest that this conversion process follows the $E = mc^2$ formula. This in turn implies that there is some unifying principle behind all the 'mass' energy conversion processes that are described by the $E = mc^2$ equation. However, for reasons already discussed, we do not believe that special relativity is capable of providing that unifying principle.

Aetheric Doppler Shift

One of the other arguments that people use against the aether concept, is the fact that the observed Doppler frequency shift for light agrees with the relativistic formula rather than the classical formula for waves carried by a medium. We will show here that the Doppler shift for light is consistent with an aether model if we add time dilation.

The standard formulas for the frequency shift of any wave carried by a medium, such as sound carried by air, when the observer or source is moving relative to that medium are as follows.

Classic Doppler formula:

$$f = \frac{f_o}{\left(1 + \frac{v_s}{c}\right)} \quad \text{source moving}$$

$$f = f_o \left(1 - \frac{v_o}{c}\right) \quad \text{observer moving}$$

> f = observed frequency
> f_o = frequency when source and observer are both stationary relative to the medium
> v_s = velocity of source relative to the medium
> v_o = velocity of observer relative to the medium

Where v_s and v_o are assumed positive when the source or observer are receding, and negative if they are approaching.

Relativistic Doppler formula:

$$f = \frac{f_o \left(1 - \frac{v}{c}\right)}{\sqrt{1 - \left(\frac{v}{c}\right)^2}}$$

where v = relative velocity between source and observer (+ve receding, -ve approaching) and c = speed of light.

Let us now look more closely at what one would expect for the case of light being propagated through a medium. Firstly, the classical Doppler shifts should apply. In addition, since we are postulating that atomic processes are slowed for an object moving relative to the aether (as discussed in the above section), we would expect that the frequency of the emitted radiation should also slow down for a moving source. In other words, the frequency of emitted radiation should be reduced by the same relativistic factor that appears in the time dilation formula.

Therefore, we expect the complete Doppler shift formula for a light source moving with respect to the aether to be:

$$f = f_o \frac{\sqrt{1 - \left(\frac{v_s}{c}\right)^2}}{\left(1 + \frac{v_s}{c}\right)} \quad \text{or the mathematically equivalent} \quad f = \frac{f_o\left(1 - \frac{v_s}{c}\right)}{\sqrt{1 - \left(\frac{v_s}{c}\right)^2}}$$

Similarly, the internal processes for an observer will slow down if moving with respect to the aether. Hence, the moving observer will see a slightly higher frequency for the radiation relative to its own slowed down processes than would be the case for an observer stationary with respect to the aether.

Therefore the complete formula for the moving observer case would be:

$$f = \frac{f_0 \left(1 - \frac{v_o}{c}\right)}{\sqrt{1 - \left(\frac{v_o}{c}\right)^2}}$$

We can combine the above two formulas to give the Doppler shifts for the general case, where both the source and observer are moving relative to the aether:

$$f = \frac{f_0 \left(1 - \frac{v_s}{c}\right)\left(1 - \frac{v_o}{c}\right)}{\sqrt{1 - \left(\frac{v_s}{c}\right)^2}\sqrt{1 - \left(\frac{v_o}{c}\right)^2}}$$

f = observed frequency

f_o = frequency when source and observer are both stationary relative to the aether

v_s = velocity of source relative to the aether (+ve receding, -ve approaching)

v_o = velocity of observer relative to the aether (+ve receding, -ve approaching)

c = speed of light

We will consider some consequences of this formula. Firstly, we note that if either the source or the observer is at rest relative to the aether (i.e. v_s or v_o is zero), the above formula will be identical to the relativistic formula. Since we are postulating that the aether is entrained by the earth, and is therefore stationary with respect to observers on the surface of the earth, any experiments where the observer is stationary on the earth's surface ($v_o = 0$) and the source is moving (most experiments are of this type) will therefore show a Doppler shift equivalent to the relativistic formula. The aetheric formula will differ from the relativistic one if both the observer and source move with respect to the aether. This would be one way the formula could be tested.

We note also, that for extraterrestrial Doppler shift measurements, such as the red-shift of stars, the aetheric formula will give values that depend on the speed of the source relative to its local aether, which generally will not be the same as the speed relative to the earthbound aether. The difference between the two formulas will depend on how much movement there is between the earthbound aether and the aether local to the source. This could help explain some of the anomalies which have been observed with astronomical observations, as discussed in the next section.

Big Bang and the Stellar Red-shift

There are many discrepancies between observation of the red-shift of stars and the theory of the expansion of the universe based on the Big Bang scenario. David Pratt has highlighted many of these, [92], see also [93], [94], [95], and [96].

It seems that the more we look, the more inconsistencies we find, (see [97] for the latest problem), and we have to introduce ad-hoc factors, such as "dark matter" and "dark energy", in order to save the standard theory. Apart from experimental discrepancies, there are also conceptual and philosophical difficulties with the Big Bang idea.

Current theory has it that the universe is expanding from an origin point as a result of space itself expanding in all directions. However, for space to expand, there needs to be something like aether particles to define the expansion. Without something to define space it becomes meaningless to talk about its expansion. However, this in turn leads to other difficulties with the Big Bang scenario. If you run the expansion backwards what happens to these 'particles' at the singularity before the Big Bang explosion?

While solutions to these difficulties may be found in the future, it seems to this author that a much simpler explanation would be that the Big Bang never happened, the red-shift can be explained in other ways. According to standard theory, the amount that light from a star is red-shifted, is proportional to the velocity at which it is moving away from us, due to the Doppler frequency shift. The general picture is of a universe that resembles a balloon which is expanding from a central point of the Big Bang, with the result that all parts are moving away from each other. This is said to explain why there is a general red-shift rather than a blue-shift or a mixture of the two.

An alternative explanation for the red-shift is the so called Tired Light model. This assumes that the frequency shift of starlight is caused, not by recession velocities, but by the interaction of light with electrons that exist at low densities in interstellar space. The further away the source, the more interactions light undergoes before reaching us, and therefore the more red-shifted it is. See Lyndon Ashmore's work [98] for a more detailed discussion in support of this theory.

We would also like to present here an intriguing alternative theory for explaining the general red-shift of stars - one that does not involve an expansion of the universe. This possibility is based on the idea that our universe forms a sphere when viewed from the 4th dimension. That is, the thin (along the 4th dimension) membrane containing our physical 3D universe curves around to form an enormous 4D sphere (see the discussion in Chapter 2).
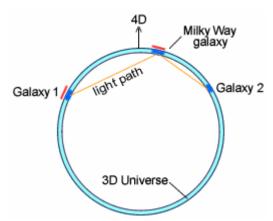

Fig 10.4 4D hypersphere model, giving an alternative explanation for the
red-shift usually attributed to the expansion of the universe.

If light from distant objects reaches us by going through the body of the sphere rather than travelling along its surface, it will create an angle of incidence for the light as it hits 3D space at our location, as shown in Fig 10.4. This is because the tangent to the surface of the 4D sphere, (red lines in Fig 10.4), along which 3D objects vibrate to create light, will be at a different angle in our part of the universe compared to that of a distant galaxy. What we see when that light reaches us, is not the original light wave but a projection of it on to the 3D plane, giving rise to longer wavelengths. The further away the source is, the greater the difference in angle, and therefore the greater the red-shift.

Chapter 11. Free-Energy Roadmap

The Objective
The objective of this work is to do research and development with a view to moving closer to the goal of free-energy for all. The impact on humanity of achieving such a goal would be enormous. Apart from the obvious advantage to our environment and health, a clean and limitless energy source would help eradicate poverty and suffering. A self-contained energy source would be particularly beneficial to third world countries that haven't got the resources or infrastructure to develop technologies or build energy delivery systems to meet even the basic needs.

Many billions of dollars have been spent in the past 50 years on fusion technologies but as yet we have not seen a kilowatt of useful energy from it. The tragedy is that there exist devices (some patented) that have been shown to produce 'free energy' but only a minuscule amount of money is being directed towards them. The next section gives some examples of these devices.

We should clarify right at the outset that by free-energy we do not mean creating energy out of nothing – a thought that would horrify traditional scientists. In the same way that solar cells tap into the 'free-energy' of the sun without any input from us, free-energy devices tap into cosmic energy reserves.

There are 3 components of the work being proposed:

Theoretical investigation in order to develop a framework to better understand the underlying
        mechanisms.
Investigate current devices and try to fit the findings to the theoretical investigation, which would in turn
        suggest ways of improving on some of them.
Use the understanding from the theoretical investigation to come up with novel devices.

Challenges and Obstacles

These can be divided into 2 main categories:

(1) Technological
The challenge is to produce viable technological devices that generate over unity outputs, that is they produce more usable energy than we put into them. This is not just a fanciful wish. There is enough evidence around to suggest that this is viable.

A very good example is the Roschin & Godin device that clearly demonstrates over excess energy outputs in a reproducible way (www.rialian.com/rnboyd/godin-roschin.htm).

Another example is the transformer-based "Motionless Electrical Generator" from the Tom Bearden group at (www.cheniere.org).

Bruce De Palma has produced a working over-unity motor (www.depalma.pair.com).

The Lutec1000 motor by the Australian pair John Christie and Lou Brits looks promising (www.lutec.com.au), to name but a few.

One of the latest examples is the Steorn device (www.steorn.net) which is based on a magnetic motor operation. They are so confident of their claim of free-enegy that they have challenged the world's top scientists to test their device and prove them right or wrong.

See also www.zpenergy.com/downloads/winmotor.wmv for a demonstration of a magnetic motor running on its own power.

We believe that the best solution would be a solid-state device, with no moving parts, as this would reduce the complexity of construction and minimise wear and tear and therefore maintenance. We think that one such possibility involves taking advantage of the properties of quartz crystal at resonant frequencies.

(2) Commercial

Following on from (1), is the challenge of producing a commercially viable device. That is, one that can be produced at a cost and energy output that competes with existing energy utilities. The degree of energy gain is important here. If a device produces a large output without a lot of complexity in its construction it makes the commercial viability a lot easier to achieve. To this end, the theoretical investigation mentioned in the previous section becomes important. If we have a sound theoretical framework and understanding of what is going on underneath, we will be in a much better position to produce such a commercial device.

See also the article by Peter Lindemann ("The World of Free Energy") which highlights some of the political obstacles to the commercialisation of free energy devices. Take a look also at the YouTube video: http://youtube.com/watch?v=hcXLFDuAJNE.

Plan of Action

The first step must necessarily be one of coming up with a technological solution for an over-unity device. We will now set out in more detail the proposed components that were outlined at the start as a way of moving closer to our objective. These would be worked on in parallel and would naturally complement one another.

(1) Theoretical Investigation

There has already been some interesting theories put forward to explain the nature of reality in a more intuitive way than current Physics allows. Most of these relate to the concept of an all pervading aether from which all matter forms. The most interesting of all is the information which explains physical matter, including electromagnetism and gravity, as different manifestations or states of a hyperdimensional aether.

Our first objective would be to extend this theory with our own investigations. The aim being to unify what has been done with what we know from Physics experiments and our own ideas. We have a number of experiments in mind that would help to clarify the situation and hopefully lead to a theoretical framework that would then allow us to make predictions about how a new configuration will behave.

One of the main initial aims would be to design experiments that would either demonstrate or deny the existence of the aether. A lot of modern Physics has been built on the assumption of the non-existence of a medium such aether. If this proves to be incorrect it would have important implications to our understanding of the universe. We believe that a lot more effort should be spent on ensuring that our foundations are solid before we build all sorts of theoretical structures on top of them.

One example of such experiments would be to look at the forces between highly charged plates when the plates are moving. It has been reported by some, that the forces are different depending on whether the plates are moving or stationary. If this proves to be correct it would point strongly to the existence of an aether.

(2) Investigation of Existing Devices

There are at least a dozen devices/set-ups that show excess output power, that warrant further investigation. A lot of these are related to electromagnetism in one way or another.

Our second objective is to investigate some of these with a view to gaining a better understanding of the principles and at the same time to try and fit these observations into the theoretical framework being developed concurrently. These would help in the development of the theory which would in turn suggest ways of improving some of these devices.

This is not limited to only 'free-energy' devices, but to a variety of phenomena including anti-gravitational effects. As an example, David Hamel has reported constructing a device which consists of an arrangement of three layers of rotating magnets (http://jnaudin.free.fr/html/hammnu.htm). When the self-contained unit is set spinning, it reaches a point where the whole thing just shoots up into the air and disappears into the sky. These amazing reports need to be investigated further.

(3) Design of New and Novel Devices

With a better understanding of the underlying nature of the physical universe, it becomes a lot easier to come up with new and novel designs that no one has thought of. Inventors have spent years coming up with solutions, sometimes by trial and error.

There are a number of areas that show unusual behaviour and are fertile grounds for further research. One of the main ones being with magnets, particularly rotating magnets. Not much is really known about the behaviour of rotating magnets.

Another area is with high voltages. Some strange phenomena have been observed when high voltages are involved, e.g. anomalous energy outputs and antigravity effects, among others.

Also, rapidly spinning objects have shown unusual behaviour. Weight loss has been reported in certain cases. In other words anti gravitational effects, which could potentially be used to generate energy - behaviour that is not accounted for by current theories.

There are also reports of extraordinary effects that have been observed by John Hutchison under certain conditions, see www.hutchisoneffectonline.com. Apart form objects being suspended in mid air, this site shows pictures of metals being cut and 'melted' without any heat being used. Particularly interesting is a picture showing a piece of wood embedded into metal without any visible damage to the wood. This has all been done by a combination of high voltages and radio frequency beams. At present, these effects are not well understood – John Hutchison says he cannot always produce them.

There is a lot of scope for further investigation and the potential for all sorts of new and amazing applications.

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