Lattice Twisting

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Another method that might cohere the ZPE is to induce a ratcheting, semi-vortical motion of nuclei by abruptly twisting a crystalline lattice. Lattice twisting can occur in ferromagnetic materials when subject to alternating magnetic fields. As the magnetic domains shift, they can launch acoustical spinor waves (Cieplak, 1980). An abrupt lattice twist can occur if the magnetic material is driven to hysteresis saturation, and then pulsed oppositely. The saturation state elastically stresses the lattice, and the reverse pulse triggers the lattice to snap back. Aspden (1990) has identified hysteresis saturation as a significant state for generating energetic anomalies with magnetic materials. The nuclei motion from the lattice twist can launch the vacuum energy vortex which manifests as an excess magnetic pulse. This type of activity could be occurring in the stators of Adam's (1993) pulsed magnetic motor, an invention claimed to produce excessive power.

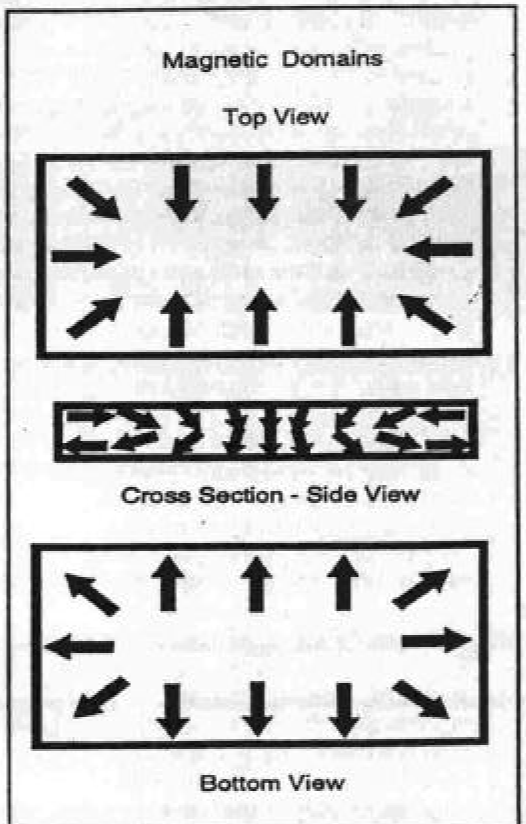

Figure 3. Magnetic domain alignment in barium ferrite after conditioning.

Sweet (1991) also appears to utilize lattice twisting in the conditioned barium ferrite magnets of his solid state energy invention known as the "vacuum triode amplifier" (VTA). Normally barium ferrite is used for permanent magnets, and its domains do not readily shift. Instead, Sweet cracks and loosens the lattice itself with the conditioning process. The barium ferrite block (6x4x1 inches) should be sintered by the manufacturer such that the ceramic is not overly hard. The conditioning is similar to how manufacturers make permanent magnets: An a.c. current is impressed on a coil surrounding the material to erase any residual magnetization.

Then a large pulse from a capacitor bank (a typical manufacturer uses 100 microfarads at 15KV) is fired through the coil to align the domains into a permanent magnet. Sweet's conditioning coil surrounds the (6x4) perimeter of the barium ferrite block and consists of 600 turns of No. 28 wire. He drives it at 60 Hz with a few amps and then switches a large pulse from a 6500 microfarad capacitor at 450 volts (values reported by Watson, 1994) through the coil, timed at the peak of the 60 Hz sine wave. Unless the ceramic is loosely sintered, it is unlikely one firing will crack the lattice. The barium ferrite block should then be turned over (or the coil polarity reversed) and the process repeated such that the domains are driven to the opposite polarity from the next capacitor pulse. The conditioning process should be repeated over and over, altering the polarity each time. The process is analogous to cold working a strip of metal by bending it back and forth until it breaks. The lattice will form micro cracks and loosen such that the magnetic domains appear to readily oscillate when excited by a weak a.c. magnetic field. It is really not the magnetic domains that are shifting; it would be more accurate to describe the cracked portions as acoustical domains since it is the lattice grains that are shifting. Thus in a straight forward manner Sweet has created a twistable solid state lattice that exhibits an acoustical resonance at the conditioning frequency (60 Hz).

Within the micro cracks of the conditioned barium ferrite apparently occurs the phenomenon that coheres the ZPE. Perhaps the shifting lattice's grains induce fractoemission in the boundaries between them. At the crack boundaries nuclei motion could be triggering a coherence in the ZPE which maintains the fractoemission. If grains twisting against each other induce fractoemission within the interior of the conditioned barium ferrite, a coherent plasma would be embedded within a solid, and this plasma could to be directly coupled to the zero-point energy. The embedded plasma is controlled by the action of the twisting domains. The plasma in the boundary between two oppositely twisting grains would be subject to dual counter-rotating vortical stimulation. The conditioned barium ferrite has the magnetic domains on the top surface aligned oppositely to those on the bottom surface, especially near the edge (Figure 3). The domain alignment follows the flux lines of the conditioning coil. Near the edges of the top and bottom faces, the domains are aligned nearly flat. (Sweet demonstrates this by placing a thin steel strip edgewise on the ceramic face. In the center it stands vertically; it tilts more horizontally as it is placed closer to the edge.) When excited by an a.c. magnetic field from the side, the top and bottom domains will twist in opposite directions as they oscillate. In the micro cracks between these oppositely twisting domains, pair production of fractoemission plasmoids exhibiting opposite helicity might occur. QED requires that vortical coherent forms arising from the ZPE occur in pairs to conserve angular momentum. If such plasmoid pairs are generated throughout the interior of the ceramic, they could integrate into two macroscopic, counter-rotating, displacement current vortices.

Dual vortex action is required in order to induce a current on a series wound, bifilar coil (i.e. the windings are shorted on one end). Sweet places the bifilar coil on the face of the conditioned barium ferrite (which is driven by an a.c. magnetic field from two separate, in phase, standard wound, "excitor" coils directed at the 4 inch sides). In a series wound bifilar coil, current must flow up one winding while it simultaneously flows down the other. No form of standard magnetic induction could induce this type of current flow. Sweet is

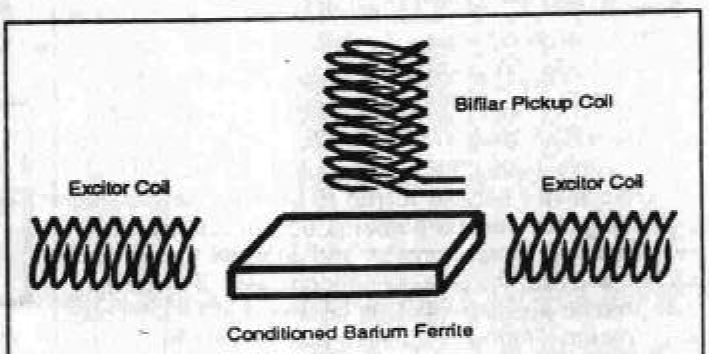

Figure 4. Placement of coils in Sweet's Vacuum Triode Amplifier.

able to tap appreciable electric power (500 watts) from the bifilar coil, and in addition, the current from this coil is "cold", i.e. thin wires (No. 30) can conduct the power without being heated. The current does not appear to be standard electron conduction; instead the coil seems to be guiding vacuum energy displacement currents (King, 1984). Other inventors have observed this cold current effect; e.g. Moray (1978) used No. 30 wire in his 50 kilowatt radiant energy device, Bedini observed it from his "gravity field generator" (Bearden, Herold, Mueller, 1985), and Panici observed it in his battery pulsing experiments (King, 1993). To make the VTA free running, Sweet taps off some of the output power from the bifilar coil and feeds it back to the excitor coils. If too much power is fed back, it overdrives the lattice twisting, and the ceramic pulverizes. The counter rotating vortices appear to significantly cohere the ZPE.

There is another indication that the ZPE is the energy source for the VTA. When running, it loses weight. Wheeler's (1962) geometrodynamics shows there is an intimate connection between the ZPE, gravity and curving the space-time metric. Likewise, Puthoff (1989) suggests that the basis of gravity is the ZPE itself. When driven to output a kilowatt, the VTA has exhibited a weight change on the order of a pound. The only energy great enough to locally alter gravity would apparently be the ZPE.

The counter rotating vortex hypothesis may also explain another well witnessed, free running, energy machine: the Swiss ML Converter (Matthey, 1985). Two large, counter rotating, acrylic disks (similar to a Whimshurst machine) induce a colorful, swirling plasma between them. This plasma would then be the analog to the fractoemission plasma between the lattice domains in the VTA ceramic. The friction action of the spinning disks create the counter rotating plasma which induces the dual vortex, ZPE displacement currents. The principle of using counter rotating plasmas might form the basis for many future ZPE machines.

The counter rotating vortex idea may elucidate how to stimulate the core material of a caduceus coil in order to output excess energy. The caduceus coil consists of two perfectly symmetric, insulated wire coils of opposite helicity wound on a cylinder. The coil wires must crisscross each other in order to be identically symmetrical. Smith wound his coils on ferrite cores (Burridge, 1979) and Van Tassel wound his on quartz (Dollard, 1988). Bearden (1986) and King (1989) have suggested pulsing these coils to create abruptly bucking electromagnetic fields that would result in a scalar ZPE coherence. On the other hand, to receive energy from the coil would require inducing the appropriate lattice twisting on the core material. For ferrites, a conditioning process much like Sweet uses for his barium ferrite would be appropriate. The domains would have to align along the diameter of the cylinder (right angles to the cylinder's axis) with alternate directions in regions at different heights along the cylinder. The domains would shift in response to excitor coils at right angles to the caduceus coil. If the ferrite lattice has cracks in between the alternate domain regions, then lattice twisting could induce the fractoemission plasma and the behavior of the caduceus coil would mimic the VTA. (It would effectively be the same as the VTA except for the shape of the barium ferrite).

Lattice twisting could also be induced on high permittivity dielectrics (barium titanate, lead zirconate, etc.) The polarization vector of the dielectric would follow the high voltage excitation from electrodes placed on the circumference of the cylinder (Figure 5). At a different position along the cylinder another set of electrodes would drive the polarization vector opposite to the previous layer in order to induce the counter twist to

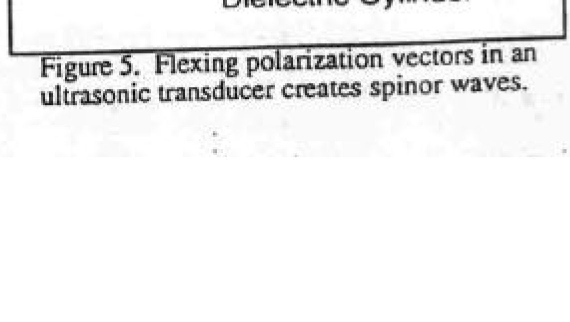

Figure 5. Flexing polarization vectors in an ultrasonic transducer creates spinor waves.

the lattice. Cracks between the lattice regions would offer opportunities for fractoemission. An electret whose polarization vectors are permanently aligned would be the analog to permanent magnetic material and would allow maximal lattice twisting. In ultrasonic transducer materials, the stimulation could induce counter rotating, acoustical spinor waves (King, 1993). If instead of a cylinder, a toroid is used, the spinor waves can circulate and close into standing waves. If concomitant ZPE displacement currents align with these counter rotating standing waves, then the positive feedback of such coherence might induce a sufficiently great ZPE interaction to produce a large gravitational effect.

Summary

The observed anomalies associated with ion motion in plasmas, liquids or solids along with the zero-point energy theories manifest a common theme that may be summarized into four principles:

1) The abrupt, synchronous motion of nuclei or ions cohere the ZPE.

2) Vortex motion of the ions produce even a greater effect, and there might be an optimal vortex shape around which a ZPE coherence would naturally form.

3) Higher order rotations, i.e. precession, further augment the ZPE interaction.

4) A large macroscopic ZPE coherence would involve pairs of counter-rotating vortical forms since this conserves angular momentum.

Today, two free running energy inventions appear to utilize these principles and consequently produce a large energy output. The Swiss ML converter clearly has two counter-rotating plasma vortices since the corona is readily observed between the oppositely rotating acrylic disks. Unfortunately, there is not enough technical information available to allow widespread replication. On the basis of simplicity, Sweet may have achieved the most elegant energy device ever invented, yet its behavior is complex since it appears to contain multiple pairs of microscopic, counter-rotating, fractoemission plasmoids within a single ceramic block. If Sweet's invention could be replicated by the scientific community, our science and technology would enter a new era.