

The Unusual Field Properties of the Faraday Disk

The Faraday disk reveals a very unusual property as explained by the following quote:

"The Faraday disc, also called the homopolar generator: a metal disk in the xy plane revolves at a constant rate about the z axis through its center. A uniform magnetic field points in the z direction. Between a brush on the axis and one on the rim of the disc a unidirectional potential difference is generated (without the commutators of conventional d-c generators). If, instead of the disc revolving, the field-producing magnets are caused to revolve about the z axis, then no inducing voltage is produced between the brushes. A flux cutting explanation here is not possible." From the book Special Relativity by Albert Shadowitz, Dover Publications, 1968, pp. 125-126.

When I first read about this, I concluded that the magnetic potential must be instantaneously supported so that there is no translational motion of the magnetic field when the field producing magnets were rotated. Then no voltage would be generated. It also suggested to me the mechanism by which the graviton potential could instantaneously extend its influence past the event horizon limit of a black hole. The action would be carried by means of the vector magnetic potential.

Recently, an email from matpitka@pcu.helsinki.fi (Matti Pitkanen) caught my attention since it mentioned the Faraday disk and the described action suddenly dropped a major piece of the puzzle into place concerning the exact nature of electrogravitation. The email is quoted below:

"The experiments of Faraday related to a rotation of cylindrical magnet with conductor disk attached rigidly on its top, are not well known to average physicist \cite{Faraday}. The outcome these experiments was that radial electric field is generated between the rim and axis of the rotating conducting disk. This effect does not follow from Faraday's law of induction and is not satisfactorily understood in Maxwell's electrodynamics and it is somewhat surprising that Faraday's experiment has not received more attention. De Palma \cite{DePalma} has repeated the experiments of Faraday and he claims that so called N-machine (De Palma generator), which is basically a conducting disk attached rigidly to a cylindrical magnet and rotated using external power input, transforms mechanical energy to electric energy with efficiency larger than one, (output power is larger than input power!). Perpetuum mobile is not in question: rather, the claim is that there is some unknown form of energy, which is transformed to

electric energy. Indian physicist Tewari \cite{Tewari} has replicated the results of De Palma and N-machines are fabricated commercially in Japan."

The above action would occur if the magnetic potential was indeed established instantaneously and did not move with the magnets or disk! it is also further evidence that we really need to look deeper into conventionally understood field theory. There are quite possibly some very important principals that have been overlooked by contemporary understanding.

So the field potential (magnetic) is established at a fixed point relative to both the moving disk and the magnets creating the field and also, that field then must not have inertial properties. Hence it has superluminal characteristics.

POSTULATE:

Consider the following: let us create a field of the above description except we provide a mechanism that establishes an inertial nature to the character of the field. We do this by arranging a whole lot of cylindrical magnets that are rotating at the same relative rate to each other such that their axis of rotations are parallel to each other and all of them lie in the same plane on another circle of rotation. Now they establish a field instantaneously that has a rotational vector magnetic potential, hence inertial characteristics. This is very much like my postulated rotating vector magnetic potential field presented in my book "Electrogravitation As A Unified Field Theory". What is missing is the standing wave electric field. If we provide this strong electric field transverse (across) the direction of the inertial vector magnetic potential field, it would tend either to attract or repel the projected vector magnetic field which is in rotation, depending on the polarity of the electric field and the direction of rotation of the vector magnetic inertial field. This also may closely parallel (if not in fact replicate) the n-machine and the Searl motor action. Note that the rotating vector magnetic potential field is transverse to the electric field but in the same plane. Then by the left-hand rule, the direction of motion would be perpendicular to both of the aforementioned fields. The desired direction for levitation would be a vertical motion.

See the following web site link to [Tim Ventura's page](#) which has excellent background photos of the Searl effect engine and craft he (Searl) constructed. Tim's email is: TVentura@illuminet.com (Tim Ventura).

Also of interest is the N-machine information site that has a good collection of [Bruce DePalma's Papers](#). A study of the Faraday homopolar disk effect is well presented.

This formalizes a concept that has been popping into my thinking for some years about the possibility of forming an inertial mass field below a craft that could be repelled against to levitate the craft above it. Considering the strange field characteristics of the Faraday disk experiments, it stands to reason that it may well be possible that Searl actually did build a craft based on the above principles and further that it did 'fly'.

The nature of the projected inertial field based on Faraday's experiments is outside of the electromagnetic domain since it has not the structure common to the ordinary electromagnetic wave. (No changing B and E field, only a 'static' magnetic vector potential.) Therefore, since Albert Einstein based his Special Theory of Relativity on the measurement results of the electromagnetic wave, the Faraday projected vector magnetic potential field may not fall within the limiting velocity of light. In fact, according to what is observed, the Faraday effect is instantaneous for all practical means of local field measurement. What lies outside of Photon Space is not directly measurable since it takes photons to carry information. Most of what exists must be outside of what we can detect by ordinary methods.

Finally, if electron mass is the result of electromagnetic standing waves in the quantum realm, then there would exist the possibility that some geometry related to electron mass would not be subject to relativistic constraints. I suggest that is that portion that is connected to the vector magnetic potential as well as the electric scalar potential.

I for one am going forward in the hope of replicating Searl and DePalma's work. Anybody else?

Special thanks to Matti Pitkanen and Bruce De Palma for sharing these important pieces of the puzzle with the rest of us!