Tewari's space-energy generator two decades later

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Abstract

N-machine of De Palma and Tewari's space-energy generator are basically similar free energy devices, which I have considered as examples of possible new physics with technological importance. Tewari's space-energy generator corresponds to a rotating cylinder with metal disk attach to it and rotating with it. The energy of rotation is reported to transform to electric energy with COP or order 2.5. There is some energy source and the challenge is to identify it. I constructed the first model for Tewari's space-energy generator in TGD framework for about two decades ago. The models of N-machine and Tewari's space-energy generator rely on simple observations about rotating magnetic systems. In particular, the observation that there is "vacuum energy density" present in the rotating system is difficult to understand in Maxwellian electrodynamics. One might hope of extracting energy from the system by connecting the system with ground via a load so that the charge can flow through it and di-electric breakdown is avoided. The Coulomb energy is however rather small so that this is not a promising idea. The model for rotating magnetic systems involved transfer of energy between magnetic body of the rotating system and system utilizing the energy by negative energy signals but I was not able to propose any detailed model for how the energy is generated at magnetic body. The emergence of new ideas and notions such as the concept of magnetic body, hierarchy of dark phases labelled by the value of Planck constant, Zero Energy Ontology and formulation of TGD inspire theory of consciousness as generalization of quantum measurement theory, the model for Pollack's fourth phase of water combined with earlier ideas lead to a considerably more detailed model for these devices and rotating magnetic systems in general. Even dark nuclear fusion and its ordinary counterpart can be considered besides Coulomb interaction energy as energy sources.

1 Introduction

N-machine of De Palma [H2] and Tewari's space-energy generator [H1] are basically similar free energy devices, which I have considered as examples of possible new physics with technological importance. Tewari's space-energy generator corresponds to a rotating cylinder with metal disk attach to it and rotating with it. The energy of rotation is reported to transform to electric energy with COP or order 2.5. There is some energy source and the challenge is to identify it.

I constructed the first model for Tewari's space-energy generator in TGD framework for about two decades ago [K1]. The models of N-machine and Tewari's space-energy generator rely on simple observations about rotating magnetic systems. One might hope of extracting energy from the system by connecting the system with ground via a load so that the charge can flow through it and di-electric breakdown is avoided. The Coulomb energy is however rather small so that this is not a promising idea. The model for rotating magnetic systems involved transfer of energy between magnetic body of the rotating system and system utilizing the energy by negative energy signals but I was not able to propose any detailed model for how the energy is generated at magnetic body.

About two decades later I saw an article about Tewari's space-energy generator (see http://tinyurl.com/gwez2yz). The title of the article was *India permits free energy technology despite threats from UK, US, Saudi Arabia*. Title certainly tells something about the attitudes of those how make decisions about energy.

It is interesting to reconsider Tewari's space-energy generator using a conceptual framework considerably more refined as twenty years ago.

1. At the time of first writing I knew nothing about dark matter assigned with the hierarchy of Planck constants $h_{eff} = n \times h$, and its applications to biological systems and free energy systems.

2. I had not formulated Zero Energy Ontology (ZEO) at that time. I had discovered the notion of negative energy signals but I did not have a formulation of consciousness theory as a the generalization of quantum measurement theory in which causal diamonds (CDs) are in key role and state function reductions take place at either boundary of CD. When the first reduction to the opposite boundary takes place, the arrow of time changes. Neither had I realized that conscious entities - selves- can be identified as state function reduction sequences at the same boundary of CD so that the presence of negative energy signals transferring information or energy can be seen as signature for the macroscopic quantum jumps changing the arrow of time. The period of Zeno effect - repeated reductions with no effect on the state of system - is replaced with period of consciousness for the system. Sensory input corresponds to the boundary where state changes and which also itself is shifted (the distance between tips of CD increases). Together with Negentropy Maximization Principle (NMP) [K2] this allows to understand fundamental aspects of consciousness.

3. Gradually the general ideas developed more detailed as I tried to understand the strange effects related to rotating magnetic systems. I identified the magnetic body of the rotating system as a carrier of dark matter cyclotron Bose-Einstein condensates carrying angular momentum as spin and angular momentum. The coherent transfer of both energy and spin and angular momentum from the magnetic body to the rotating system was proposed as a manner for rotating magnetic system to angular momentum. One could understand the generation of angular momentum by assuming that the net angular momentum vanishes but the the origin of the rotational energy remained unclear.

4. Concerning the origin of energy in Tewari's space-energy generator, the most conservative view is that the negative Coulomb interaction energy between the rotating system and magnetic body serves as the source of energy. The Coulomb energy is however rather small.

   Charge could be also fed to the system and is transferred outside it so that Coulomb energy begins to increase and eventually di-electric breakdown could take place. If the charge fed to the system does not rotate with it, a radial Lorentz force is generated. If it is of the same sign as the charged already generated, it is transferred outside by Coulomb repulsion. This however tends to reduce the Coulomb energy, which is undesirable.

   If the incoming charge rotates with the system, it experiences no Lorentz force. In this case the mechanism driving the charge outside the system could be based on the preservation the $E = -v \times B$ condition: this involves new physics since the condition implies vacuum charge density. This option looks more plausible.

5. How are the charges transferred to the magnetic body and how the negative Coulomb energy could be generated? It is easy to see that "vacuum charge density" $\rho = \omega B$ is negative if the direction of rotation is *clockwise* and magnetic field points "upwards" ($B > 0$, $\omega < 0$) using right-hand rule. In this case protons could be transferred to the magnetic body and negative Coulomb energy would increase in magnitude. The preferred direction of rotation means large parity breaking possibly related to the large breaking of parity in living matter. By energy conservation the negative Coulomb energy must be compensated by some form of energy, say that associated with the rotational motion of system and dark matter at it with opposite angular moment, or by external load utilizing the Coulomb energy (wire connecting the rotating system to the load and back would be enough).

6. An attractive idea is that the matter at the magnetic body is dark and thus makes possible macroscopic quantum coherence. In this respect an especially interesting effect is the generation of what Pollack calls the fourth phase of water [I1]. This phase consists of negatively charged regions - exclusion zones (EZs) - with positive charge outside them. The

TGD inspired proposal is that the phase is formed as protons from the hydrogen bonded water molecule pairs inside EZs are transferred to the dark magnetic flux tubes outside EZs having large value of $h_{eff} = n \times h$ [K4] and form dark proton sequences identifiable as dark nuclear strings identified as dark nuclei. Some strange findings motivate the hypothesis that these dark proton strings are assumed to form a fundamental representation for genetic code. Earlier the ordinary nuclei are identified as nuclear strings [K3].

Besides Coulomb energy also the dark nuclear binding energy liberated in the formation of dark nuclei could be usable energy. This energy could also stabilize the flux tubes against Coulomb repulsion as it does in the case of the ordinary nuclei. If the nuclear binding energy scales like 1/distance, it would be of the order of the energy of bio-photons for dark nuclei of atomic atom size - that is the energy range of visible and UV light. The liberated energy could be utilized. Hence the Coulombic binding energy need not be the only source of energy. For slow enough feed the system is expected to keep its original state, it must transfer this positive charge to the magnetic body so that its positive charge increases and new dark nuclei are formed and also Coulomb interaction energy increases in magnitude.

Could this dark proton phase should be formed in the case of Tewari space-energy generator? It is an experimental fact that the rotating Faraday disk becomes charged. The sign of the charge however depends on the direction of the rotation. This means large parity breaking. Does Pollack effect occur only for the rotation direction for which the generated charge - vacuum charge in the above model - is negative? Or can the dark nuclei form also at the flux tubes inside the Faraday disk? If dark nuclei are formed, the liberated dark nuclear energy could go to rotational energy of the rotating magnetic system. In principle it is possible that the dark nuclei transform to ordinary nuclei. If this happens, huge nuclear energies are liberated. I have proposed that this could explain the claimed bio-fusion [K4] (an amusing accident is that Tewari is nuclear engineer!). In the sequel Tewari's space-energy generator is considered from this point of view.

2 An updated model for Tewari's space-energy generator

One can formulate an explicit model for the situation.

1. Assume a cylinder of radius R (with area $S = \pi R^2$) and length L rotating with angular frequency ω and carrying constant magnetic field B, whose flux arrives along single or even more cylindrical magnetic walls. Assume that from the conservation of magnetic flux the return flux has same value of magnetic field so that the total area of return flux tubes is same as the area of the cylinder: $S_{ret} = S = \pi R^2$.

2. The condition $E = v \times eB$ determining the radial electric field associated with longitudinal electro field rotation with velocity $v = \omega \times \rho$ could be interpreted in terms of mechanical equilibrium. One could see the condition as as generalization of Faraday law for linear motion following from Lorentz invariance to that for a rotational motion. This generalization does not however follow from Maxwell's equations. A further interpretation natural in TGD framework is that the electric field is obtained automatically when one puts the 3-surface in rotation motion so that the induced gauge potential $A(\rho, \phi)$ is replaced with $A(\rho, \phi - \omega t)$.

   For $B = 1$ Tesla and $\omega = 10$ Hz and $\rho = 1$ meter then magnitude of $E$is 2π V/m. This voltage means electrostatic energy and the electric field forces a current to run in wire in radial direction.

   What is remarkable that electric field is not anymore sourceless so that one obtains vacuum charge density the sign of which depends on the direction of rotation. The interpretation is that some fraction of protons or electrons is transferred outside the rotating cylinder to the cylindrical magnetic walls. Situation is analogous to that in the generation of Pollack's exclusion zones (EZs) [I1].

   Assume that protons are transferred outside the rotating cylinder to magnetic flux tubes carrying the return magnetic flux and are transformed to dark matter with a large value $h_{eff} = n \times h$ of Planck constant. This requires quantum criticality in some sense.

3. The assumption that dark protons form dark proton sequences identifiable as dark nuclei with a binding energy, which scales like 1/distance so that it scales like $1/h_{eff}$. For the scaled up nucleon size about a=1 Angstrom one would have $h_{eff}/h = a/\lambda_p \simeq 10^5$. The binding energy per nucleon would scale from its typical value of MeV to 10 eV. An attractive assumption is that the range of biophoton energies covering visible and UV lengths covers the binding energy range. The binding energy is liberated as dark photons with energies of visible and UV photons and can provide energy for the rotating system.

4. A more quantitative estimate is obtained from the expression of electric field $E = \omega eB\rho$. The charge density is $\rho_c = \omega eB$. The number of elementary charges per unit length is

$$\begin{aligned} \frac{dN}{dl} &= \frac{\omega}{c}\frac{\Phi}{\Phi_0} = \frac{S}{S_0} \quad , \\ \Phi &= \int eBdS = eBS \quad . \end{aligned} \tag{2.1}$$

   Φ/Φ_0 is the magnetic flux using as quantum of magnetic flux with area $S_0 = \pi l_B^2/2$, where the magnetic length l_B is given by $l_B = \sqrt{\hbar c/eB}$. One has $l_B \simeq 26nm\sqrt{Tesla/B}$.

5. Consider a fraction of cylinder with length a which corresponds to scaled up nucleon size defining the length of one unit in dark nucleon string. The total number nucleons at cylindrical return flux quanta per nucleon length is

$$\Delta N = \frac{dN}{dl}a = \frac{\omega a}{c}\frac{S}{S_0} \quad . \tag{2.2}$$

   The total area per single charge at return flux tubes using S_0 as unit is

$$\frac{\Delta S}{S_0} = \frac{S_{ret}}{S_0}\frac{1}{\Delta N} = \frac{\Delta S_{ret}}{S_0} = \frac{S_{ret}}{S_0}\frac{1}{\Delta N} = \frac{c}{\omega a} = \frac{c}{\omega\lambda_p}\frac{h}{h_{eff}} \quad . \tag{2.3}$$

   This gives

$$\frac{\Delta S}{S} = \frac{c}{\omega\lambda_p}\frac{h}{h_{eff}}\frac{S_0}{S} \quad . \tag{2.4}$$

   One must have $\Delta S/S < 1$ (the number of protons at dark flux tube is larger than one). This gives a lower bound to the value of ω as

$$f_{min} = \frac{c}{2\pi\lambda_p}\frac{h}{h_{eff}}\frac{S_0}{S} \quad . \tag{2.5}$$

   This frequency represents critical angular velocity if charge transfer is quantum process.

6. Consider as an example a cylinder of radius $R = 1$ meter carrying magnetic field of 1 Tesla and assume $h_{eff}/h = 10^6$ giving nm sized dark protons suggested to be important in biology. From $S_0/S = 2.6^2 \times 10^{-16}$ m^2 and $c/2\pi\lambda_p = 2.3 \times 10^{23}$ Hz one obtains $\omega_{min} \simeq 25$ Hz. Large enough value of Planck constants help to lower the minimal rotation frequency. Rather small numbers of dark protons are involved so that the power liberated by the formation of dark nuclei remains rather small. Joule/s would require 6.84×10^{18} eV/s. A cylinder with radius of 1 m and length of 10 meters would liberate a total energy of about 10^9 eV (about 10^{-9} Joule).

A continual production of energy requires a continual feed of positive charge to the cylinder implying a continual feed to the magnetic flux tubes in steady state.

1. The rate defining step is the transfer of charge to the flux tubes. This process is probably a quantum process. The feed dN_p/dt of positive charge cannot exceed the rate of this process. The power produced would be

$$P = \frac{I}{e}\Delta E = \frac{dN_p}{dt}\Delta E \ , \tag{2.6}$$

   where $\Delta E_d = (h/h_{eff})\Delta E$ is the binding energy per dark nucleon and $\Delta E \sim 1$ MeV ordinary binding energy per nucleon. This assuming that binding energy scales as 1/length.

2. Note that this process would generate an increasing voltage between flux tubes and cylinder, which as such could serve as source of electrostatic energy. This would happen even without the occurrence of dark fusion. This would not however yield excess energy.

3. One obtains $\Delta E =\sim 1$ eV for $h_{eff}/h = 10^6$. For $\Delta E = 1$ eV this would give $P = (I/A) \times (10^6/h_{eff})$ W from the fact that $I = 1$ Ampre corresponds to a current of $dN_p/dt = 6.84 \times 10^{18}$ charge carriers per second. A continual transformation of energy to electric energy could be achieved if the liberated energy does not go to accelerated rotation of the cylinder but only to the compensation of dissipative effects. One should also have a model for the transfer of energy from the flux tubes to the rotating system and to the energy of the current. This step is expected to involve dissipative losses.

4. The power for ohmic losses is given by $P_{loss} = UI = I^2R$ (here external load is included) and in steady state one has $P = P_{loss}$ giving voltage

$$U = IR = \frac{10^6}{h_{eff}}V \ . \tag{2.7}$$

   This is rather small number. One can of course ask whether supra current could help in the situation.

One can consider also the possibility of ordinary cold nuclear fusion. Could one induce transformation of dark nuclei located at magnetic flux tubes to ordinary nuclei thus liberating binding energy of nucleon about 1 MeV? This would be equivalent with cold nuclear fusion and evidence for it has been found in living matter and systems involving splitting of water [K4]. A possible mechanism would rely on bringing negative charge to the rotating system. This would increase the Coulobic attraction between dark nuclei at flux tubes and could bring them to the cylinder, where they would transform to ordinary matter and liberate nuclear binding energy. This kind of possibility would mean technological revolution.

A continual transformation of energy to electric energy could be achieved if the liberated energy does not go to accelerated rotation of the cylinder but only to the compensation of dissipative effects. One should also have a model for the transfer of energy from the flux tubes to the rotating system and to the energy of the current. This step is expected to involve dissipative losses. One can of course ask whether supra current could help the situation. Note that the proposed model might quite generally apply to the modelling of rotating magnetic systems and suggests that a continual current through the system might make possible continual production of energy.

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