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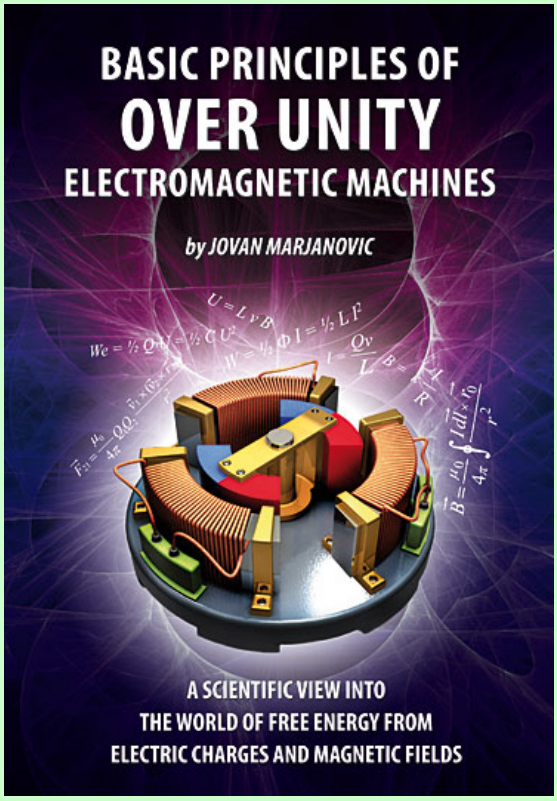

Basic Principles of Over Unity Electromagnetic Machines

A Scientific View into the World of Free Energy from Electric Charges and Magnetic Fields

by **Jovan Marjanovic**, M.Sc.

Johann W. Goethe said that the biggest secrets were the open ones. You look at them but you do not see them. The same is true with the electromagnetic field. It is known fact that after switching off an electromagnet, its magnetic energy will be returned back to the circuit, usually as a spark. What was missed is the fact that the magnetic energy performed work by attraction of an iron bar and didn't consume itself. This work, minus heat losses inside the circuit, is free energy or over unity energy.

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-- The paper starts below --

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DRY FRICTION and the MILKOVIC EFFECT

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September 21, 2014, Novi Sad, Serbia

ABSTRACT

The goal of this paper is to exclude dry friction as a cause of the increased duration of oscillation of a pendulum when compared to the rotation of a wheel, starting after the initiation of their movement and waiting until the movement is stopped by itself. Since this phenomenon was discovered by Veljko Milkovic, an inventor and a member of the academy of inventors of Serbia (SAIN), the author has chosen to name it the Milkovic Effect. The opinion of the author is that this phenomenon is complementary to the Aspden Effect, which will be further discussed in this paper, along with other inertial anomalies known to the author.

Key words: friction, wheel, pendulum, inertia, mass, gravity, anomaly, rotation, oscillation.

INTRODUCTION

Veljko Milkovic has published several articles about the efficiency of pendulums compared to the rotation of wheels[1]. His findings were also published in his latest bilingual book[2]. He noticed that the swinging of a pendulum, after its initial rising into the upper position, lasted about two hours, while the rotation of various wheels in which equal energy was invested, lasted from several seconds up to one minute. This is a ratio of a several hundred times in favor of the pendulum. Without discussing the reasons for this phenomenon, Veljko Milkovic has recommended that either a pendulum or a wheel with eccentric mass be used instead of a common flywheel in stationary machines where the accumulation of energy is necessary, like in the case of various water or oil pumps.

[1] See internet site: http://www.veljkomilkovic.com/Naucni_radoviEng.html
http://www.veljkomilkovic.com/Docs/Veljko_Milkovic_An_Invention_Possibly_Greater_Than_the_Wheel.pdf

[2] Veljko Milkovic, *Gravitational Machines: From Leonardo da Vinci to the Latest Discoveries*, VEMIRC, Novi Sad, Serbia, 2013 http://www.veljkomilkovic.com/books/gravitational-machines.html

In this paper, the author will analyze friction forces and will prove that the classical formula for dry friction does not show such an advantage of oscillation compared to rotation, and that it is necessary to search for a different explanation. It will be proven that the cause of this phenomenon is similar to the cause of the phenomenon discovered by Dr. Harold Aspden and which is called the Aspden Effect. For the same reason, the author will name this effect the Milkovic Effect as these two effects are complimentary. Several examples of inertial mass and gravitation anomalies will be given at the end of the paper for comparison.

DRY FRICTION

It is a well-known fact that friction force F_t between a body being moved on an uneven surface by the action of force F and said surface, depends on the normal force N and the quotient of friction with the surface, k, *figure1.*

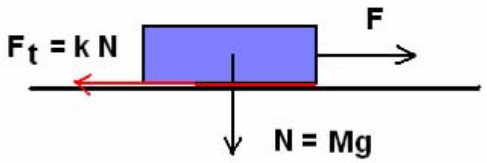

Figure 1

Normal force N against the horizontal surface is equal to the weight of the body, Mg, where M is the mass of the body and g is the acceleration of gravity, 9.81 m/s^2.

Let's first observe dry friction in the cases of a wheel and a pendulum which can, but don't have to, have a bearing, when the shaft is tightly inserted into the hole, or when the bearing balls are firmly pressed to the ring of the bearing, *figure 2*. This is one of the boundary cases in which great friction is caused.

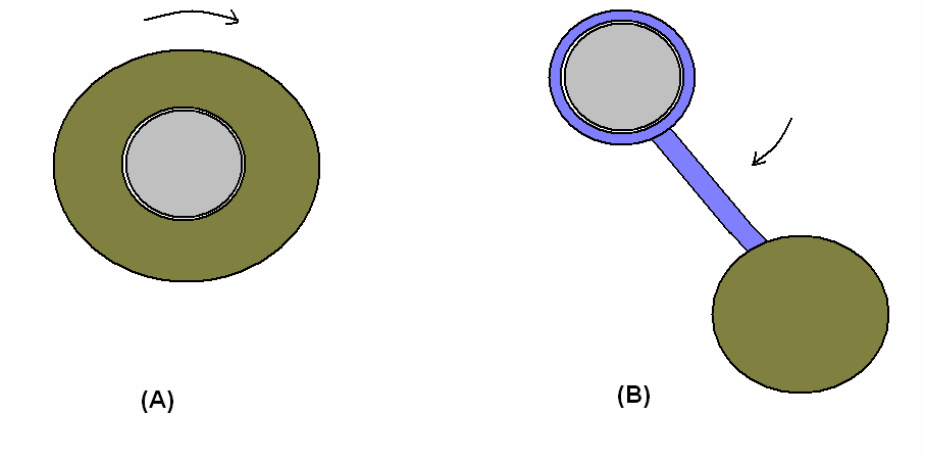

Figure 2

In both the examples above, the weight of the wheel or the pendulum is not important if the shaft is practically jammed. Friction in both cases is big, as if the shaft was rusted, and the wheel and the pendulum can hardly move. This means that there will be neither free rotation nor swinging. Movement is possible only as a consequence of the action of a strong external force.

Another boundary case is when the bearing or the shaft is loose so that the pressure of the normal force can be felt only on a small part of the hole or on one ball of the bearing, *figure 3*.

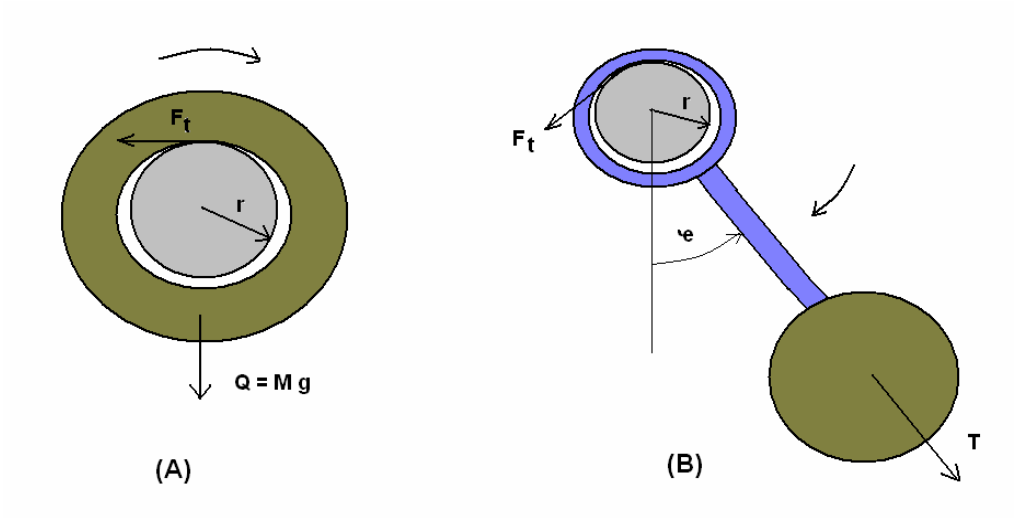

Figure 3

Friction force for the wheel F_{t1} is equal to the product of friction quotient k and the normal force:

$$F_{t1} = k\, M\, g \qquad (1)$$

The energy spent on friction for the wheel to turn 90 degrees is equal to the product of the friction force and the path passed by the force which is equal to one quarter of the circumference of the shaft:

$$E_{t1} = F_{t1}\ r\ \pi/2 = k\, M\, g\ r\ \pi/2 \qquad (2)$$

The formula for tension force T in the handle of the pendulum is given with[3]:

$$T = Mg\,(3\cos(\varphi) - 2\cos(\varphi_o)) \qquad (3)$$

Assuming that the initial angle of the raised pendulum $\varphi_o = 90^{\,0}$

$$T = 3\, Mg\, \cos(\varphi) \qquad (4)$$

[3] See paper: Jovan Marjanovic, *Keys of Understanding Gravity Machines of Veljko Milkovic*, 2008 http://www.veljkomilkovic.com/Images/Jovan_Marjanovic_Key_of_Gravity_Machines.pdf

The friction force in the pendulum is variable and is equal to:

$$F_{t2} = k\ T = 3\ k\ Mg\ \cos(\varphi) \tag{5}$$

The energy spent on the friction in order for the pendulum to come down to the lower position is equal to:

$$Et_2 = \int_0^{\pi/2} F_{t2}\ r\ d\varphi$$

$$Et_2 = 3kMgr \int_0^{\pi/2} \cos\varphi\ d\varphi$$

$$Et_2 = 3\ k\ M\ g\ r \tag{6}$$

The ratio of two friction energies, the pendulum against the wheel, is:

$$Et_2 / Et_1 = 6 / \pi = 1.91 \tag{7}$$

This means that the total energy spent in the pendulum is almost double the energy spent in the wheel. It also means that it would be logical to expect that the swinging of the pendulum stops before the wheel stops the rotation under the forces of friction. However, in practice this has not been the case, rather, the results have shown the opposite.

The conclusion is that the faster stopping of the wheel in comparison to the pendulum is not caused by dry friction on its shaft. Since the wheel is symmetric, the resistance of the air can not be responsible for the faster stopping of the wheel in comparison to the pendulum.

ASPDEN EFFECT

Dr Harold Aspden[4] has performed an important experiment which proved the existence of an aetheric lag in the movement of permanent magnets. Aspden was testing an electric motor that had disk shaped ferrite magnets, the kind used in loudspeakers, which were mounted on a rotor shaft. The rotor had the mass of 800 grams. The test motor was started on no load by a drive motor. In order to bring the motor up to a speed of 3,250 revolutions per minute, it was necessary to invest 300 Joules of energy. This was the first anomaly because the kinetic energy of the rotor, together with that of the drive motor, was no more than 15 joules.

[4] Dr. Harold Aspden, **Discovery of Virtual Inertia**, New Energy Times, 1995
http://www.scribd.com/doc/76567187/1995-Harold-Aspden-Discovery-of-Virtual-Inertia
ENERGY SCIENCE: AN INTRODUCTORY OVERVIEW by Harold Aspden, 2004

The next anomaly was the fact that after five minutes of running the motor and then stopping it, it was necessary to invest only 30 Joules to restart the motor in the same or the opposite direction. However, it was necessary to begin restarting the process not more than a minute after stopping the motor. If the restarting process was delayed, it would need more energy to bring the rotor to 3,250 rpm. Note also that at all times the bearings and the motor housings were cold.

Harold came to the conclusion that there was something there spinning which had an ethereal nature with an effective mass density 20 times that of the rotor. That something could spin independently and take several minutes to disappear, whereas the motor came to rest in a few seconds.

The author also noticed that if a DC motor of 50 W was running without a load for some time, its current would keep decreasing. After the motor was turned on it would pull the current of 10A and after a few seconds it would drop to 4.5A. After one minute or more the current would drop to 3.5A. It is hard to believe that this decrease happened because the bearings were warmed up. Hot bearings would expand and create additional friction. If grease was present, then warming would have helped it to soften. However, it is still hard to believe that a current drop of 20% happened because friction kept diminishing over time.

INERTIAL ANOMALIES

There are several experiments which have proven the anti-gravity behavior of mass. The author doesn't know who invented the first rifle with twisted grooves inside the pipe. It is a well-known fact that a rotating bullet will pass a longer distance than a non rotating bullet. That's why every rifle has twisted groves inside the pipe. Perhaps, the inventor believed that the rotation diminishes air friction. This could be true, but it doesn't mean that diminished friction is the main cause of longer path passed by the bullet. Such anomalies of rotating bodies have been accidentally discovered after some problems with sending space crafts beyond Earth's atmosphere by Americans and Soviets.

The first such problem happened in America on the night of January 31, 1958 when Explorer 1 went for one third higher into orbit than intended. The next three explorers have shown the same anomaly. In January 1959, Luna 1, the Soviets' first unmanned lunar probe passed the Moon's orbit, 6,000 kilometers ahead of the Moon. It was necessary for some time to pass before Von Braun realized that the problem was in the rotation of the capsules which was necessary for their gyroscopic stabilization. When they stopped the rotation of the capsules, the capsules were able to enter into their desired orbit. Rotating capsules had passed longer distances just as the rotating bullet from a gun. Details about this case can be found on the internet[5].

[5] The title of the text is: **Von Braun's 50-Year-Old-Secret** by Richard C. Hoagland, 2008 http://www.enterprisemission.com/Von_Braun.htm

After some time, Bruce de Palma, an engineer who worked for NASA for a period of time, continued the research of rotating bodies. He came to the conclusion that rotating balls will go further up, but will come down faster than those launched without previous rotation, *figure 4*.

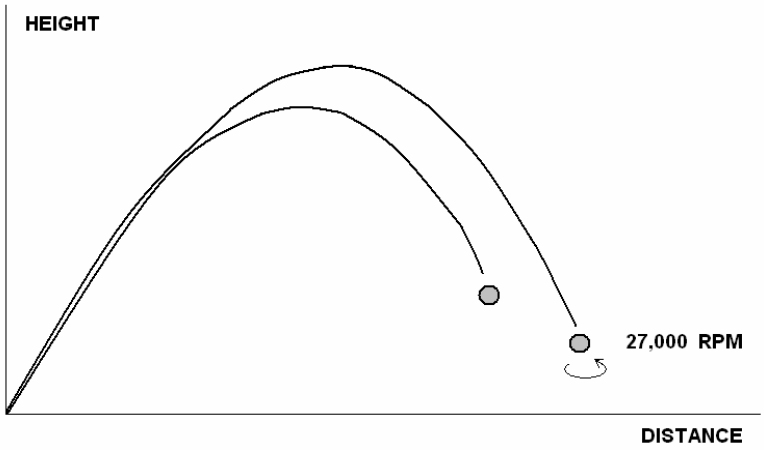

Figure 4

Figure 4 shows that a ball which is rotated by a fast motor and launched at an angle of 45 degrees goes higher than a non-rotating ball. The rotating ball also goes further in distance but falls down earlier than the non-rotating one.

Besides the simple rotation there is an interesting anomaly of mass loss in the case of a gyroscope. A gyroscope is a top, i.e. a rotating body which maintains itself in a specific position, i.e. doesn't want to fall down to the ground. If a top was pushed it would perform precession i.e. slow rotation around another axis.

Russian scientist Kozirev has claimed that precessing gyroscopes lose some mass. British professor, Eric Laithwaite, a man who first designed the magnetic pillow train, has devoted a significant part of his life to studying gyroscopes. He also patented a device for inertial propulsion, i.e. the drive for a flying vehicle which hauls itself without external support by a friction force and without mass loss, as is the case with rockets[6]. The author of this paper has explained this patent in his new book about free energy which should be printed at the end of this year and the patent will not be further mentioned here.

Professor Laithwaite has demonstrated the loss of mass and centrifugal force of a gyroscope with more experiments which can be found on the internet[7]. One experiment which undoubtedly demonstrates mass loss is displayed in *figure 5* and can also be found on the internet[8].

[6] It is US patent # 5,860,317 titled as *Propulsion System* by Eric Laithwaite, William Dawson (January 19, 1999)

[7] Short film about the loss of the mass: *Eric Laithwaite - gyroscopic gravity modification.mov* http://www.youtube.com/watch?v=MHlAJ7vySC8

[8] See also: *Eric Laithwaite's Talk on Gyroscopes w/ Demos (1974) - 3 of 5* http://www.youtube.com/watch?v=g60ZCcquCl8

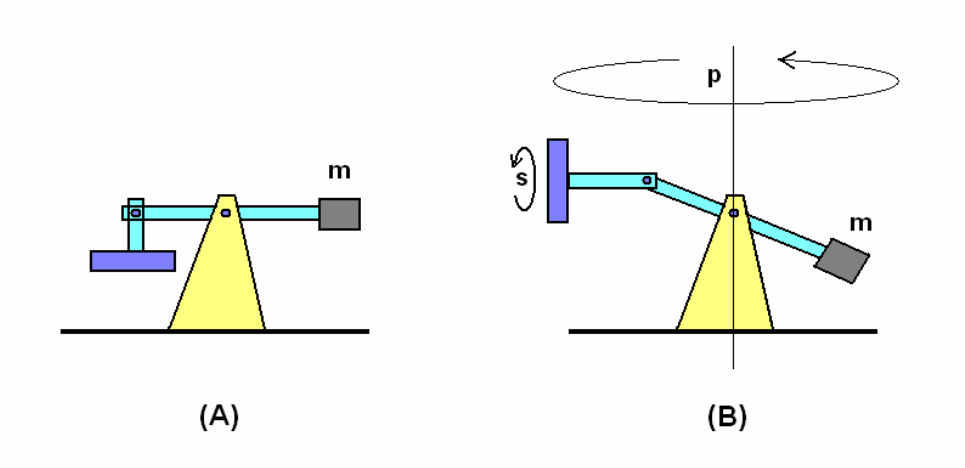

Figure 5

Professor Laitwaite balanced the disk of a gyroscope with a weight with mass *m*, *figure 5 (A)*. Then his assistant rotated the disk with an air gun, until it reached its desired speed. The disk started precession (slow rotation) in the horizontal plane and went up under the influence of gravity, *figure 5 (B)*. It can be seen in the figure that mass *m* went down and the disk of the gyroscope went upwards, which means that the gyroscope lost some of its mass.

An interesting thing is that the gravity force which pulled the disk down couldn't move it to the ground, but it started the rotation in the horizontal plane. The question is which force does the work during rotation in the horizontal plane, as the gravity force can perform the work only in the vertical plane? It is not known to the author weather precession slows the speed of rotation of the disk or not. If not then over unity work is present here, as well as a free energy of an unknown force, seeing that gravity cannot perform the work under an angle of 90 degrees with its direction.

CONCLUSION

By considering everything that has been said above, the conclusion can be made that in the case of the first rotation of a body it is necessary to invest more energy than it was calculated by the formula for the kinetic energy of a rotating rigid body. The Aspden Effect is applicable here, according to which it is necessary to invest 20 times more energy, seeing it is necessary to, so to say, break the ice first.

After a short period of time, the formula for kinetic energy of a rotating body is mainly valid, because it is necessary to take into account that there is friction between the shaft and the bearing and also the resistance of the air. This means that additional energy is necessary to compensate for energy loss.

After stopping the investing of external energy and leaving the body to itself, the Milkovic Effect is valid according to which rotating bodies will stop prematurely in comparison with the swinging of a pendulum.

Because the pendulum has been studied and mathematically described since Galileo, it shouldn't be assumed that the pendulum has an energy surplus by itself i.e. that it is an over unity device and that the system is not closed. It can

rather be assumed that rotation has an energy deficit i.e. that rotation is “under unity“ because it shows the lack of energy at the beginning (Aspden Effect) and at the end (Milkovic Effect).

There is, however, the pendulum with a flexible rod whose period of oscillation is shorter in comparison with the common mathematical pendulum. Mr. Milkovic has tested the duration of the oscillation of such pendulums and has come to the conclusion that they perform better in comparison to the common pendulum. The cause of such behavior could be one of the following two reasons: the duration of the swinging is extended because of the energy got from the elasticity of the pendulum rod, or because of the inertial anomaly caused by the additional acceleration of the pendulum bob caused by the elastic force of the flexible rod.

The idea to use elasticity as a source of free energy was developed by Bruce de Palma who made the Equivalence Engine[9] which comprised a flywheel and a flexible shaft connected to an electric motor. The flywheel oscillated to the left and right with a resonant frequency of 60 hertz and kept helping the motor which showed small energy surplus.

The question remains whether the mathematical pendulum could behave better if it was additionally accelerated by an electric motor. The author didn’t test it but has seen a device on the internet, invented by a Greek inventor Chalkalis[10], which consisted of two pendulums connected like the letter “V“ which were rotating fast. Chalkalis claims that there is a surplus of kinetic energy in comparison to the input energy. At the beginning the author found it unbelievable and didn’t care about that claim. However, now it seems that it would be worth to test this. A single or double pendulum should be accelerated in one direction or alternatively in both directions, although in the latter case it wouldn’t be possible to accelerate it significantly. In any case, the final conclusion should be left to those who are able to test this claim.

[9] For details see paper: Bruce E. DePalma*, How the Equivalence Engine Works*, June 10, 1977

[10] Chalkalis presentation is on this video link: *F.M.CHALKALIS ENERGY MULTIPLIER*
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