

Cosmic Energy Machines

*** Working units in China already exist ***

As Explained by the Lee-Tseung Lead Out Theory

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The global energy crisis is over. Oil is no longer a strategic resource. There is no need to go to war over oil.

Wealth is the quality and quantity of meaningful economic activities. Such activities can be infinite. Ignorance and poverty will become a distant memory.

Note: The major change to V3.0 is the realization that the ideal pulse force for a pendulum is the pull applied perpendicular to the arc of motion at the maximum displaced positions. This pull will lead out the maximum gravitational energy via the tension in the string. Similarly, the best pulse force for rotating systems is tangential to the radius (or in the direction of rotation). The rotating systems should rotate faster due to the pulse force and rotate slower due to external load (friction, work, etc.)

Contents:

1. Boat in calm water and good sunshine scenario
2. Development history of the cosmic energy inventions
3. Indirect use of gravitational energy (still air, etc.)
4. Explaining the Lee-Tseung Lead Out theory via the application of pull to the simple pendulum
 - 4.1 First pull of the pendulum bob to the LHS
 - 4.2 Second pull when the pendulum bob is at the maximum LHS position
 - 4.3 Third pull when the pendulum bob has swung to the maximum RHS position
 - 4.4 Subsequent pulls at the maximum displaced LHS/RHS positions.
 - 4.5 Summary and implications of the new calculations
5. Direct use of gravitational and electron motion energy
 - 5.1 First generation (extract energy via cutting Earth's magnetic field)
 - 5.2 Second generation (extract energy from gravity)
 - 5.3 Third generation (use of intelligent chips)
 - 5.4 Fourth generation (extract energy via change of magnetic flux)
 - 5.5 Fifth generation (improving the third generation over 100 times)
6. Explaining the operation of the TPU (for comparison)
7. Summary
8. Appendix A – Mathematical calculation of forces on the pendulum bob

1. Boat in calm water and good sunshine scenario

Patent offices and the scientific community used the law of conservation of energy as a roadblock for perpetual motion machines. The law of conservation of energy essentially says that energy cannot be created or destroyed. It can only change from one form to another. If the source of energy of an invention cannot be identified, the invention is likely to be classified as an impossible perpetual motion machine.

The Boat in calm water and good sunshine scenario is simple. If a scientist does not know how to use solar energy, he might wrongly apply the law of conservation of energy and advocate the use of muscle energy to move the boat. If he knows how to use solar energy, he can relax and let the solar panel powered engine move the boat. The law of conservation of energy is never violated. The solar panel powered engine will not be classified as a perpetual motion machine.

All objects are immersed in gravitational fields. Newton's law of universal gravitation says that two masses attract each other with a force equal to the product of their masses and inversely proportional to the square of the distance. The Earth rotates around the Sun according to this law. All objects, including our bodies, obey this law. We attract and are attracted by the Sun, the Moon, the distant stars and each other. Movement of such objects will have energy exchanges (work = force x displacement). If an invention uses such gravitational energy, it does not violate the law of conservation of energy. In the Lee-Tseung PCT patent application (PCT/IB2005/000138), we used the term *lead out*. This source of gravitational energy is non-polluting, available anywhere and almost inexhaustible.

An even more powerful source is the electron motion energy. Electrons are present in all atoms. They are usually thought of as negatively charged particles rotating around the nucleus. The rotation gives rise to magnetic fields. The changing of orbits gives rise to electromagnetic waves. Their clustering gives rise to electrostatic fields. Their movement along conductors gives rise to electricity that we depend on daily. Sunlight is just a form of electromagnetic wave. Radio waves, TV waves are other forms of electromagnetic waves. We are immersed in such waves. If an invention uses such immersed electron motion energy, it does not violate the law of conservation of energy.

The Lee-Tseung theory predicts that both gravitational and electron motion energy can be lead out via pulse force at resonance on oscillating, vibrating, rotating or flux

change systems. The ideal pulse force for a simple pendulum can be thought of as the pull applied perpendicular to the arc of motion when the pendulum bob is at the maximum displaced position. The detailed mathematical proof is via the analysis of the simple pendulum during the application of the ideal pulse force. The pulse force increases the tension of the string and leads out gravitation energy. For a horizontal pulse force, two parts of pulse energy can lead out approximately one part of gravitational energy. This gives a Coefficient of Performance (COP or output energy/input energy) of 1.5 during the application of the pulse. Some forum members did not appreciate the qualifying statement of “during the application” and thought that the pulsed pendulum was a COP=1.5 system as a whole.

This misunderstanding is corrected here:

- (1) Let the time at which pulse force is applied be T_{pulse}
- (2) Let the time of oscillation of the pendulum be $T_{\text{oscillation}}$
- (3) Let T_{pulse} be 1/100 of $T_{\text{oscillation}}$. This represents the real case of pushing a swing and then let go. Most of the swinging time has NO pulse force.
- (4) Let the system during the NO pulse force period be very efficient. Assume the COP is 1.0.
- (5) The overall COP for such a system is not 1.5 and should be calculated as follows:
 $1.0 + (1.5 - 1) * 1/100$ (Spreading the higher efficiency over the total time)
 $= 1.0 + 0.005$
 $= 1.005$
- (6) In the real world, the pendulum has COP less than 1 during the NO pulse force period. Thus the net result of the real pulsed pendulum is less than 1.
- (7) In order to get the real pulsed pendulum to exceed 1, we have to do one or more of the following:
 - Increase the number of pulses per unit time
 - Increase the pulse period
 - One practical way is to change the pulsed oscillation of the pendulum to the pulsed rotation of a cylinder.
 - With a pulse- rotating cylinder, we can increase the number of pulse points; increase the rotational speed; increase the mass at the rim; and increase the diameter of the cylinder to lead out the larger amount of gravitational energy.

The gravitational energy is not created but lead out. Patent offices, scientists and many inventors have not understood this lead out energy source in the past. Use of this lead out energy does not violate the law of conservation of energy.

The experiment by Ms. Forever Yuen on a magnetic pendulum clearly demonstrated that if we can lead out gravitational energy, we can also lead out magnetic energy (a form of electron motion energy). The frequency of oscillation of a magnetic pendulum by itself (away from other magnets) is say 100 cycles per minute. If a magnet is placed below, attracting it, the frequency increases. If a magnet is placed below, repelling it, the frequency decreases. This experiment can be replicated easily worldwide.

Ms. Wini Woo pointed out that the equivalent gravitational constant could be increased, equal to zero or even negative. Zero implies floating in space. Negative implies rising away from Earth. This gives rise to the Flying Saucer China Patent Application by Woo, Fong and Tseung. A rotating ball inside a sphere is held by magnetic forces. If the magnetic force is removed, the ball will fly away in a tangential direction carrying the sphere with it. This invention is termed Magneto Propulsion Unit by Tseung.

Many over-unity developers use rotating objects in magnetic fields. Many already observed the electrogravitic effects. Thus, solving the energy crisis via the Cosmic Energy Machines also solves the propulsion to outer space problem. Nothing needs to be ejected out. Electron motion energy has a few advantages over gravitational energy including:

- Repulsion is available
- Direction and strength can be controlled
- Magnetic or electric flux can be turned on or off

We have classified the development of the Cosmic Energy Machines into five generations in this paper for better understanding.

2. The development history of the cosmic energy inventions

My development started from an experiment on fluid mechanics in May 2004 at the Tai Po office of Mr. Peter Chan. Mr. Henry Ku and I were performing an experiment to compare the characteristics of water under push and pull conditions. Some air accidentally leaked into the apparatus. Water and air bubbles spurted out from the testing tubes for over 20 minutes. It was obvious to us that such an effect could not be attributed to the difference in density (water compared with air/water column) alone. We then started the research on the characteristics of air/water column mixtures.

Mr. Peter Chan introduced us to his friend Mr. Kwan who wrote a book on PPMs. In the book, Mr. Kwan described a pump as a proof. I read the book cover to cover seven times and concluded that the most valuable statement in the whole book was: "The resulting water contained much oxygen and is suitable for fish farming." The pump was not a PPM but a device that used the energy from still air similar to the Ku experiment mentioned above.

I worked out the formula to explain the process. Air is not a fuel but an energy carrier. The energy carried by air into a system can be different from the energy carried out by air from the system. The formula is

Energy carried in by air = pressure in x volume in

Energy carried out by air = pressure out x volume out

The difference can be used to generate electricity.

I then used two simple beach pumps and some one-way valves to demonstrate the theory. My friends (Cheung et al) set up the demonstration system at Tai Po. Mr. Lee Cheung Kin, a retired engineer with missile training from China saw the demonstration and agreed with the theory. Mr. Lee also mentioned a car from Dr. Liang Xingren that required no fuel and obtained a video and the marketing literature. In the marketing literature, Dr. Liang used a mixture of Chinese philosophy of Yin-Yang and Western ideas to explain why the car required no fuel.

Mr. Lee and I laughed at the explanation and decided to seek new explanations. The next morning, Mr. Lee woke me up at 7:30am from the hotel and asked me to rush over. Mr. Lee showed me a pendulum toy and his theory. (That early theory was later corrected.). Mr. Lee also introduced Professor Woo, a retired scientist who helped to develop the first Chinese atomic bomb. Professor Woo met Dr. Liang

personally and was confident that the car did work. We then seek the help of the Hong Kong Invention Association and had the first press announcement on December 20, 2004 at Tai Po.

The night before the press announcement, a Chinese Foreign Trade Official, Mr. Au Yang, showed a CD from another inventor, Mr. Sung Tim Fat. Mr. Sung provided an early version of his invention to Dr. Liang. The invention was an electricity generator that required no fuel. Mr. Sung thought that the energy came from the permanent magnets. He could not explain why that creation or replenishing the magnets used x units of energy. The machine could then generate much more than x units of energy.

It was clear to me that the above inventors did not have a correct theory. I continued to work on the theory. The theory was expanded from oscillation systems to rotational systems; from gravitational to magnetic fields; from rotations to vibrations; from vibrations to flux changes, etc. The latest is the fifth generation.

Another major theoretical breakthrough is on the understanding of magnetism. I can now explain why that a permanent magnet can be utilized to generate energy. The magnetic field is caused by the motion of electrons. The permanent magnet is not the source of energy. It induces changes in the motion of the electrons – changing their orbits and hence energy levels. There can be energy exchanges with the surroundings. The energy comes from rearrangement of the orbits of the electrons and exchanges with the surrounding such as light, heat, etc. There is also evidence that magnetic fields can affect the half-life of some radioactive elements. This means nuclear forces may even be possible.

This eventually led to the famous ‘boat in calm water and good sunshine’ scenario that was mentioned in the first chapter of this paper.

I asked a 13-year-old student, Miss Wini Woo to help me with the PowerPoint file. Miss Woo did a great job and also informed me that she could produce a flying machine using the theory of equivalent gravitational constant described.

Mr. Raymond Ting joined us in January 2006. Within a few weeks, he completed many demonstration experiments on the Woo flying machine. To his credit, he also designed simple experiments on the pendulum systems that conclusively demonstrated that pulse forces could “lead out” gravitational energy.

3. Indirect use of gravitational energy (still air, etc.)

The first demonstrable use of energy from still air from me was in June 2004. I applied for the PCT patent in July 2004. The theory is as follows:

1. Air can be brought into the system carrying in energy E_{in}
2. Air can be carried from the system carrying out energy E_{out}
3. Energy E_{in} can be greater than energy E_{out}
4. The difference is energy supplied by air
5. The carried out air can expand and absorb energy back from the atmosphere causing global cooling (reversing the effect of global warming).

The practical demonstration of the invention is shown in Figure 3.1.

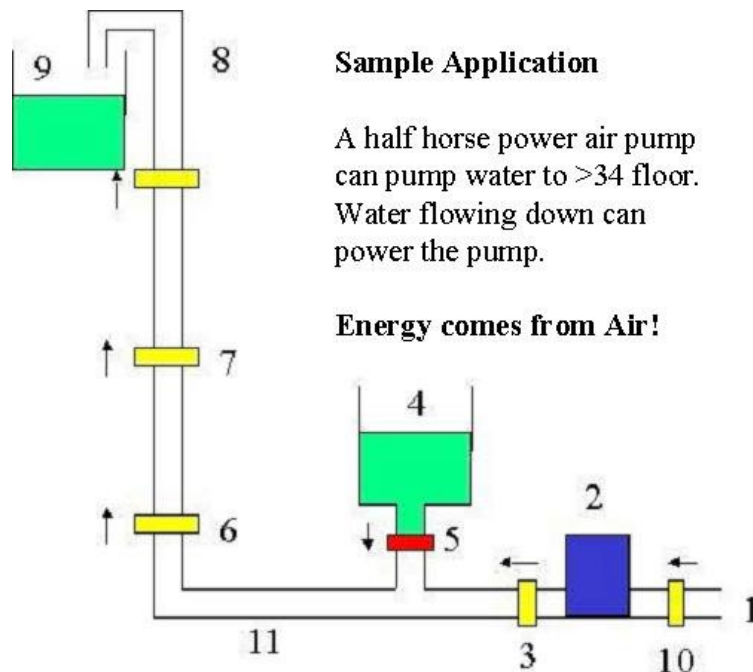


Figure 3.1 Sample application of energy from still air

In Figure 3.1, 2 shows a HK\$300 electric air pump; 4 is the lower water tank; 9 is the upper water tank; 3,5,6,7,8,10 are one-way valves. The water and air mixture is sent to the upper water tank 9. The mixture is separated. The total energy input is that from the air pump + energy from air E_{in} . Many engineers and scientists previously ignored E_{in} . Professor Woo and many members of the Chinese Academy of Science accepted this correction.

4. Explaining the Lee-Tseung Lead Out theory via the application of push and/or pull to the simple pendulum

We can now describe how cosmic energy can be Lead Out from:

- (1) The first pull of the pendulum from rest position to LHS
- (2) The second pull from the maximum position on LHS
- (3) The third pull after the pendulum swings to the maximum position on the RHS
- (4) The subsequent repeat of (2) and (3)
- (5) The extension to magnetic fields (electron motion)
- (6) The extension to electric fields (electron motion)
- (7) The extension to unbalanced rotations
- (8) The extension to pulsed balanced rotations
- (9) The extension to flux change systems
- (10) The extension to electrogravitic systems

It was like building the jigsaw puzzle. Lee and I had the basic idea in 2004. As we pieced together additional pieces of the puzzle, the picture became clearer and clearer.

4.1. First pull of the pendulum bob to the LHS

We can clearly apply vector mathematics of integrals to this situation. The pendulum bob starts from rest. This means it is suspended vertically with no motion. We then apply a horizontal pull on the pendulum bob to move it to the LHS. The pendulum bob moves to the LHS and rises slightly upwards. We can use the Law of parallelogram of forces for analysis.

We can resolve the force into the vertical and horizontal components. There are three forces acting on the pendulum bob: the gravitational force F_{1g} , the tension of the string F_{1s} and the horizontal pull F_{1p} . These three forces are at equilibrium when the pendulum is pulled to the LHS.

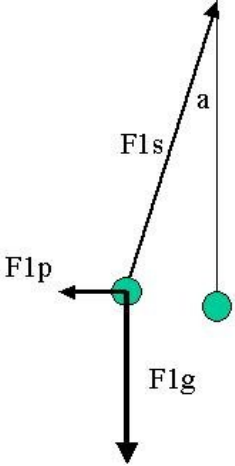
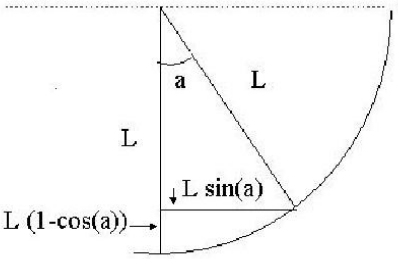
We can resolve the displacement into the vertical and horizontal components. The horizontal displacement is $L\sin(a)$. The vertical displacement is $L(1-\cos(a))$.

The horizontal work done (energy supplied) is by the horizontal pull only.

The value = $F_{1p} * L\sin(a)$

The vertical work done is by the vertical component of the string.

$$\text{The value} = (F1s * \cos(a) * L(1-\cos(a))) = F1g * L(1-\cos(a))$$

	<p>Figure 4.1 The First Pull</p> <p>The first pull on the pendulum is from the rest position to the LHS.</p> <p>The three forces acting on the pendulum bob are:</p> <p>F1g = force due to gravity (weight) F1s = force due to tension of string F1p = horizontal pull</p>
<p><u>Displacement Considerations</u></p> 	<p>Figure 4.2 The Displacement</p> <p>L = Length of the string</p> <p>horizontal displacement = $L\sin(a)$ vertical displacement = $L(1-\cos(a))$</p>

This analysis shows that some energy must come from the tension of the string. (Horizontal force without the use of machines such as pulleys, levers, etc., cannot do work in the vertical direction.)

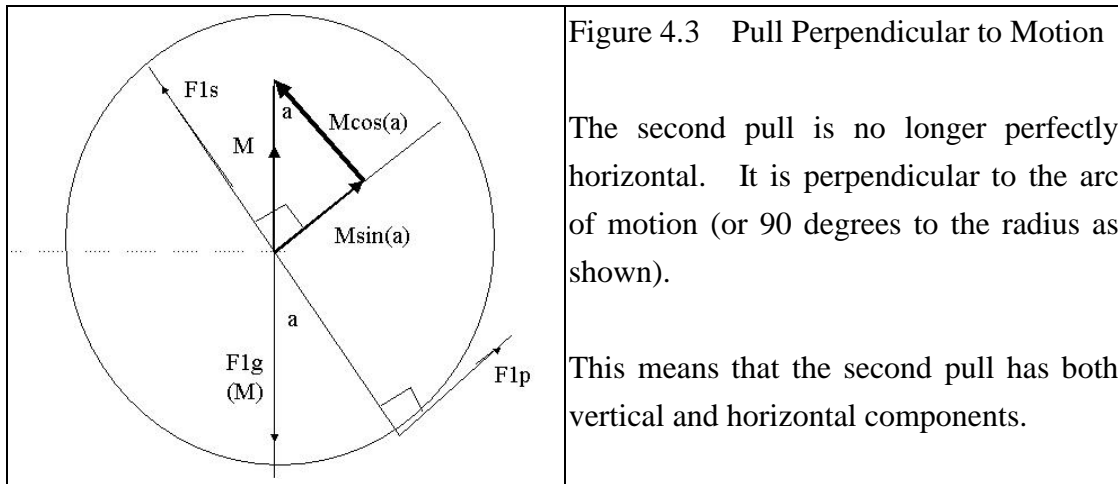
This "string energy" is the lead out gravitational energy.

$$\begin{aligned} \text{The coefficient of performance (COP)} &= \text{total output energy} / \text{input energy} \\ &= (F1p * L\sin(a) + F1g * L(1-\cos(a))) / F1g * L(1-\cos(a)) \\ &= 1.5 \text{ for small angles } a \text{ approximately} \end{aligned}$$

Thus the analysis of the first horizontal pull on the pendulum bob clearly indicated that some energy comes from the tension of the string, which is the lead out gravitational energy as described in the Lee-Tseung theory.

4.2. The second pull when the pendulum bob is at the maximum LHS position

This step is a change from a horizontal pull in Figure 4.1 to a pull perpendicular to the arc of motion. The direction is no longer perfectly horizontal. It can be treated as an extension of Figure 4.1.



The slight modification is that the pull force is no longer horizontal. It is perpendicular to the arc of motion (or tangentially). When resolved into horizontal and vertical directions, $F1p$ has a vertical component contributing directly to lifting the pendulum bob.

However, the tension of the string will still contribute. Thus this second pull will also lead out gravitational energy. In Appendix A, we use angle $a = 30$ degrees and further pull it by 2 degrees. The COP is 1.7 approximately (even better than 1.5!)

4.3. Third pull when the pendulum bob has swung to the maximum RHS position

This step happens after the pendulum is released from the maximum position after steps (1) and (2) on the LHS. The pendulum bob has acquired the energy from pull (1) and pull (2) and the lead out gravitational energies.

When released from the maximum position on the LHS, the pendulum bob swings back to the RHS. If there were no loss of energy, the pendulum bob will reach the maximum mirror position on the RHS.

There is no additional gravitational energy after the release. There is energy change from potential to kinetic etc.

At the maximum RHS position, before the pendulum bob changes direction, a third pull in the tangential direction to the movement arc is applied. This third pull will have both vertical and horizontal components.

However, the tension of the string still contributes to the vertical energy. Gravitational energy is again lead out.

4.4. Subsequent pulls at the maximum displaced LHS/RHS positions

The start of this step happens after the pendulum is released from the maximum position after 4.3. The pendulum bob has acquired the energy from pull (1), pull (2), and pull (3) and the lead out gravitational energies.

When released from the maximum position on the LHS/RHS, the pendulum bob swings back to the RHS/LHS. If there were no loss of energy, the pendulum bob will reach the maximum mirror position on the RHS/LHS. If there were no subsequent pulls, the pendulum bob would keep swinging forever assuming no loss of energy.

There is no additional gravitational energy during the swing. There is energy change from potential to kinetic, etc.

At the maximum LHS or RHS position, before the pendulum bob changes direction, a pull in the tangential direction to the movement arc is applied. This pull will have both vertical and horizontal components.

However, the tension of the string still contributes to the vertical energy. Gravitational energy is again lead out.

Thus the amplitude of the swing increases. Most of the time, no gravitational energy is lead out. However, there is lead out gravitational energy during the application of the many pulls.

These pulls must be applied at the right time. This right time is what we referred to as resonance. Continued pulling will produce a much larger angle, the ratio of (lead out energy / pull energy) will drop from 0.7 to a much lower figure.

Thus the pulsed (periodically pulled) pendulum is NOT the most efficient gravitational energy lead out machine.

If the applied pull is always in the horizontal direction, the pendulum bob will not rise above the pivot point of the string. However, the tension will keep increasing. This is the reason why bridges can break apart at resonance. The many small pulls can indeed add together to infinity!!!

This new understanding of the destructive force at resonance will have important impact in our daily lives.

4.5. Summary and implications of the new calculations

The first 4 steps essentially describe a particular way of moving the simple pendulum bob. The stationary pendulum bob is

- (1) Pulled to the LHS by a horizontal force (1) without letting go. The pendulum bob will go up because of the tension in the string. The horizontal force cannot do work in the vertical direction by itself. It can do horizontal work. The vertical work (lifting of the pendulum bob) is done by the tension of the string. This is the lead out gravitational energy.
- (2) The pendulum is still at rest but now a pull force (2) is applied. This pull force (2) is no longer horizontal. It is tangential to the arc of motion. This pull force (2) can do work both vertically and horizontally. However, some of the vertical work is done by the tension of the string. This pull (2) also leads out gravitational energy.
- (3) The pendulum is then let go. It will swing from its maximum position on the LHS to its maximum position on the RHS. During this "let go" period, no more push or pull force is applied. There will be no more leading out of gravitational energy during this swinging period. If there were no losses of energy due to friction, air resistance etc., the swinging motion should continue forever. Now, when the pendulum bob swings to its maximum position on the RHS, another pull force (3) tangential to the arc of motion is applied. This pull force (3) will also lead out gravitational energy.
- (4) Both pull energy and lead out gravitational energy are added by repeating (2) and (3). The amplitude of the swing increases. If no more pull force were applied at any time, the pendulum would swing with the acquired amplitude and kept swinging forever at that amplitude if there were no energy loss. This is the true understanding of the "periodically pulled" or pulsed pendulum.

This new understanding of the pulsed pendulum explains the lead out gravitational energy much more clearly.

5. The extension to magnetic fields (electron motion)

The Forever Yuen Magnetic Pendulum conclusively proved that if we could lead out gravitational energy, we should be able to lead out magnetic energy. (The pendulum bob is replaced by magnet A. Another magnet B is placed below the pendulum bob to attract or repel magnet A. The number of oscillations per second changes.)

The additional advantage of leading out magnetic energy includes:

- (1) Magnets can have both attraction and repulsion
- (2) The researcher can control the direction of the magnetic field. It does not need to be vertical. It can be in any direction.
- (3) The magnetic field can be turned on and off via electromagnetic coils.
- (4) The strength of the magnetic field can be many times that of the gravitational field.
- (5) A magnetic field comes from the orbiting electrons. Unless the electrons stop rotating and fall into the nucleus, there will be magnetic field due to motion of the electrons. It is a matter of aligning and using such energy. The law of conservation of energy is never violated.
- (6) Even in outer space when the net gravitational field is small, there can still be strong magnetic fields produced by permanent or electromagnets.
- (7) The rapid turning off or withdrawing of the magnetic force when a magnet rotates can produce the electrogravitic effect. Propulsion in any direction or hovering is possible without ejecting any material.

6. The extension to electric fields (electron motion)

The first extension is to electrostatics. We are familiar with electric charges. An electron carries negative charge and a proton carries positive charge. When there is an excess amount of electrons concentrated in one area, that area shows properties of negative charge. When there is a decreased number of electrons in one area, that area shows properties of positive charge. We focus on electrons because they are light, reside outside the nucleus and can roam about relatively freely. The protons, on the other hand, are rigidly bound with the neutrons inside the nucleus.

Electrostatic charges have similar attraction and repulsion properties as magnetic poles. We can obviously use similar techniques such as electrically negative pendulum swinging in an electric field. However, electricity has much closer ties with electron motion. We may be able to do much better.

We all know that direct current (DC) is due to electron motion in one direction. Alternating current (AC) is due to electron motion in both directions. Electron motion clearly has energy associated with it. The existing belief is that an external source of energy must be used to generate electricity. The most common external sources of energy include chemical (batteries), solar and mechanical rotation (turbines).

The Lee-Tseung theory predicts that gravitational energy is another possible source. The known mechanism is via pulse (periodically repeated pushes or pulls) at the right time. The differential and integral vector mathematics or the application of the parallelogram rule clearly demonstrated that the tension of the string contributed to the lifting of the pendulum bob. This contribution is the lead out energy from gravity.

The Forever Yuen experiments with magnetic pendulums clearly demonstrated that if gravitational energy could be lead out, electron motion (magnetic) energy would also be lead out.

If we can somehow cause electron motion, we should be able to get energy. Joseph Newman and others found that the drive coil and the pickup coil could be the same physical coil. With suitable circuits and arrangements, seemingly dead batteries could be recharged. A battery driven car appeared to draw no chemical energy from the batteries. Newman and others called this as - charging by back EMF. However,

their explanation fell short of explaining the source of energy. Can energy be created from nothing? If so, is the law of conservation of energy violated?

The correct answer is that energy cannot be created from nothing. Energy has been lead out from gravitational and magnetic fields. The law of conservation of energy is never violated.

The Adams Motor demonstrated that the drive coil and the pickup coil could be separate coils. However, Newman, Bedini and Adams never had the Lee-Tseung Lead Out theory to guide their development. They did not appreciate the importance of having a mechanism or program to adjust the input to the external load.

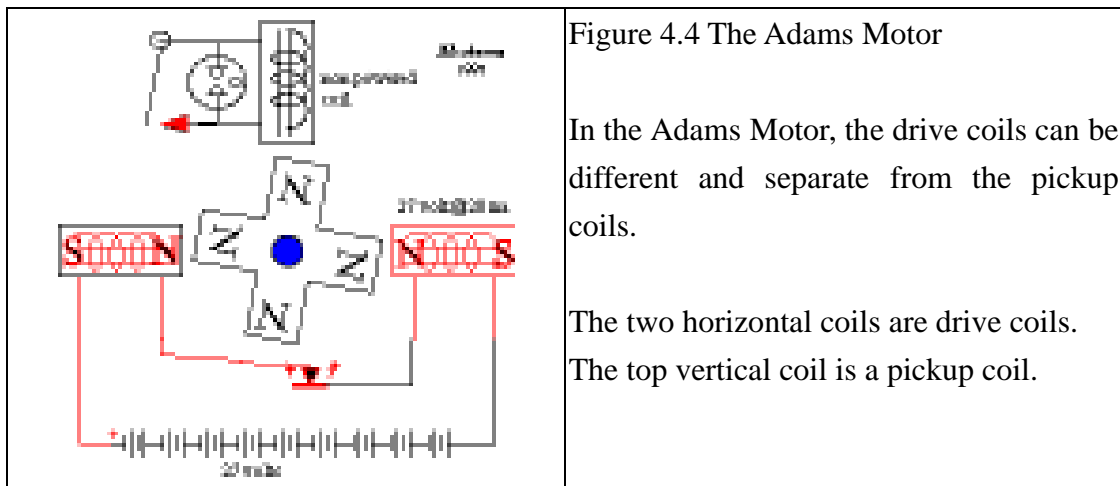


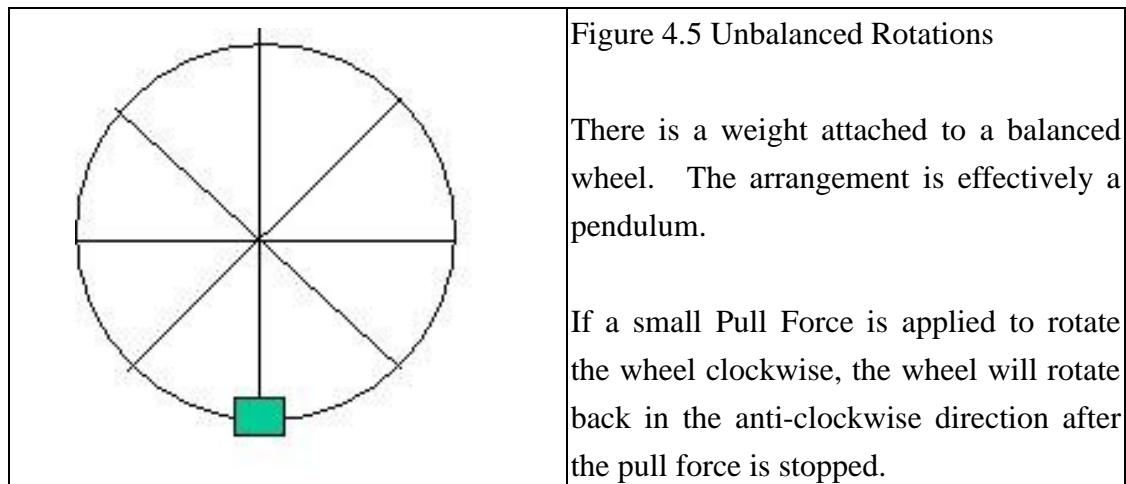
Figure 4.4 The Adams Motor

In the Adams Motor, the drive coils can be different and separate from the pickup coils.

The two horizontal coils are drive coils. The top vertical coil is a pickup coil.

They did not appreciate the importance of keeping the rotational speed and the effective pulsing high. They either allowed the rotational speed to decrease with external load and thus greatly reduce the lead out power; or they "drifted" into non-resonance or bad timing pulses. The bad timing pulses will NOT lead out gravitational or electron motion energy. The analogy is pushing the swing at the wrong time.

7. The extension to unbalanced rotations



In the diagram, a small weight is attached to the rim of a balanced wheel. On a slight pull, the small weight will swing up and then swing back. The action is identical to that of a pendulum. If the wheel is spun in a complete circle, its rotational speed will slow down when the weight goes up. Its rotational speed will speed up when the weight goes down. Thus we have deceleration and acceleration. When we have deceleration and acceleration, Newton's laws demand the presence of a force.

Thus if we give the unbalanced wheel a reasonable speed of rotation first, the deceleration and acceleration acts like a pull or a push. If the timing is correct, gravitational energy can be lead out. It might be possible for the unbalanced wheel to attain perpetual motion due to the lead out gravitational energy. However, this has to be done exactly right. The more practical designs would involve falling hammers, falling weights, rotating arms, etc. Many claimed to have developed such devices. The most famous one is the Bessler Wheel (see <http://www.besslerwheel.com>).

However, to be successful, these devices will have to have large diameter; have heavy weights at the rim to provide the flywheel effect and well timed pulsing mechanisms. The chance of such devices becoming practical electricity generators is slim.

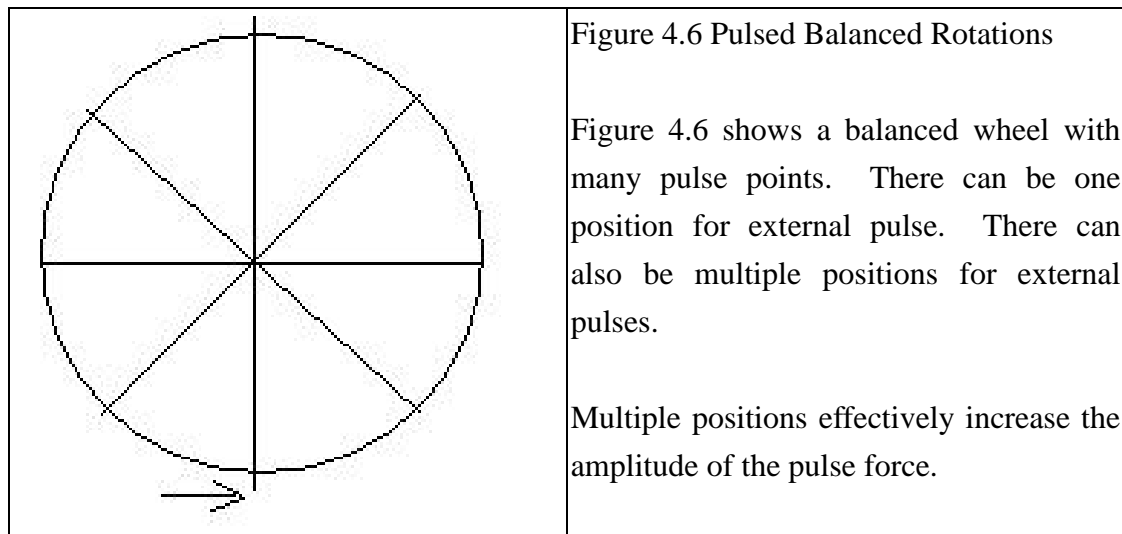
The Wang Shum Ho Device is probably one of the exceptions. It uses the coupling of two systems: a ferro-liquid rotation system and a solid magnet rotation system. The solid magnet rotation system is effectively an unbalanced rotation. The repulsion is enhanced by setting the magnets at the stator at special angles and the proper use of magnetic shielding material. Similar effects have been demonstrated in the David

Hamel device (<http://davidhamel.com/>). The most interesting part is the experimental part of having a circular magnet on top of a ball. Another ring of magnets is placed on top. The magnet with the ball will rotate. Similar experiments have been done using magnets taped to the handle of a screwdriver. The ring of magnets would force the screwdriver to rotate.

Another demonstration is the self-accelerating pulse motor with magnets and nails is described in Overunity.com titled Working Attraction Magnet Motor on YouTube (<http://www.overunity.com/index.php?topic=3482.msg54724#msg54724>).

The Wang device is worth special mentioning because it was first demonstrated openly in an invention show in China in 1997. A few thousand people saw the demonstration but he could not obtain financial support, and he did not have a coherent theory at that time. We helped to provide the theory and to promote him via the Internet. He demonstrated his device to five Chinese officials on January 15, 2007 in Beijing. By June 2007, he was made one of the nine vice presidents of General Magnetics 磁普 (a RMB 13 billion company).

8. The extension to pulsed balanced rotations



We can apply electromagnetic attraction or repulsion to pulse rotate balanced systems. With balanced systems, we have the following advantages:

- (1) The rotational speed can be very high.
- (2) There can be multiple pulse points on the wheel.
- (3) We can vary the number of pulse points to maintain a designed speed of rotation
- (4) We can vary the strength of the pulses to maintain a designed speed of rotation.
- (5) We can use governor circuits to maintain the rotational speed.
- (6) We can have the magnetic field in any direction. Thus the axis of rotation can be in any direction.
- (7) The magnetic field can be much stronger than the gravitational field.
- (8) The factors determining how much gravitational or electron motion energy can be lead out include:
 - Number of pulses per revolution
 - Strength of each pulse
 - Strength of the permanent magnets and current to the coils
 - Speed of rotation
 - Efficiency of the pulse force (tangential to rotation best)
 - Mass of the rotating cylinder (the flywheel effect)
 - The program to adjust the input according to external load
 - Sensing mechanism

The two proven balanced rotational systems that can generate substantial power are:

(1) The 225 HP pulse motor developed in USA - 9 slices each generates > 20 HP.

(2) The Liang IC pulse motor developed in China - 700 IC pairs generate > 188HP.

Both have program control to adjust input according to external load.

Many variations of (1) are being developed in China. One of the first products from General Magnetics 磁普 of China is likely to be a generator for a small village based on the technology in (1).

Independently, Dr. Liang Xingren is developing electricity generators in southern China based on his technology.

My plan is to discuss (1) in much greater detail and then invite international interest groups to develop some versions of (1).

9. The extension to flux change systems

The previous systems all require physical motion. The question now is - can electron motion be induced without physical motion?

The obvious answer is yes. The first example an electrical engineer will think of is the transformer. The AC voltage and current can be changed (stepped up or down) via conventional transformers. The electron motion on the primary or input side can affect the electron motion on the secondary or the output side.

The question is whether additional electron motion energy can be lead out? One can try to use permanent magnets inside the device. This was done in the Lee-Tseung-Sung China patent. However, the permanent magnets tend to lose their magnetism under the impact of AC current. The steering current technique such as that described in www.flynnresearch.net is much better.

I deliberately play low-key on this invention, as Lee Cheung Kin is the consultant to a Japanese company ready to market such a device.

I believe the most likely commercial products are the competition amongst:

- The Hungarian EBM machine (already announced and demonstrated)
- The Wang Shum Ho Electricity Generator for home use (in certification)
- The Chao Ching San Car in China (obtained production license)
- The Electricity Generator for the Village from China (the flagship of General Magnetics)
- The Japanese Flux Change Device (rumored to be in production)
- The 225 HP Pulse Motor from USA (many versions are being prototyped)

10. Extension to electrogravitics

The first suggestion that the technology could be applied to electrogravitic devices was from a then 13 year old Ms. Wini Woo. She was helping Tseung to do the PowerPoint presentations. When she handed the finished file to Tseung, she said that: "I can build the Flying Saucer now!"

Tseung was obviously skeptical but as an encouraging teacher and family friend, said: "Are you sure?"

Wini: "If your theory is correct, my Flying Saucer will fly."

Tseung had no choice but to focus attention on the explanation.

Wini: "The effective gravitational constant can increase on magnetic attraction. It can decrease on magnetic repulsion. It can be zero or negative. Zero implies floating in mid air. Negative means rising from Earth."

Tseung was shocked. Tseung contacted Bill Fong, an Engineer friend and discussed the issue. They first talked about the Action and Reaction Law of Newton. That Law allows a bullet to shoot out from a gun but will not allow the bullet and gun combination to move as a single unit in any direction. The thought experiment was that if one fired a gun or cannon in a closed container, the container should not move because of equal and opposite reaction.

However, both recalled that if they put firecrackers in a closed tin can, the tin can could bounce around. One of the possible explanations was that there were holes in the tin can. It was the expanding air ejecting from the holes that caused the bouncing. They decided to suspend a tin can in a pendulum fashion and ignited one large firecracker to check if there was any observable movement. They were willing to go for the second step of having the firecracker in a totally enclosed container and ignite it with remote control.

The primitive first step experiment showed significant movement of the tin can. David Cheung helped by putting a toy electric car in the tin can. The remote control toy electric car caused much movement of the tin can. Tseung, Bill and Wini discussed the matter further. They recalled the spinning top toy. Tseung went out

and bought a few of these. Sure enough, after pulling the string hard, the spinning top rose a couple of inches in mid-air.

They then talked about the throwing of the chained ball by the athletes. The chained ball was first swung in circles to build up speed and then let go. The sudden loss of the centripetal force will allow the chained ball to fly tangentially at high speed.

Tseung immediately recalled that many over-unity inventions used rotating magnets. What would happen if the magnetic force was suddenly cut or reversed? Would the entire device go up like the spinning top?

What happens if one magnet rotates in a separate outer cylinder around the 225 HP pulse motor setup and that this cylinder is suddenly yanked away from the magnetic field? Will the entire device move in the tangential direction?

The decision was to file a China Patent in mid-2005. The inventors were Wini, Bill and Tseung. The patent attorney mentioned that such a patent might be classified.

Subsequent experiments confirmed the correctness of the decision. Tseung then spent more thoughts on a special ball that can lead out electron motion energy and provide propulsion. Tseung coined this ball the Magneto Propulsion Unit. The Nanjing UFO video on youtube.com in mid-2006 seemed to indicate a successful prototype in China. (Tseung was not involved in the design and building of that prototype). The CIA or the Like Group said that USA and England may have already known similar technology for decades but decided to keep it top-secret.

Then Tseung discovered the John Searl information. Tseung also found that many other over-unity inventors also claimed that they could produce the electrogravitic devices including Newman, Liang, Milkovic, etc. Discussions at Tsing Hua University and with other top research institutes in China confirmed that the spinning top behavior as a potential source of propulsion would not violate Newton's third law of motion (action/reaction).

5.0. The direct use of gravitational and electron motion energy

(This part was retained from the previous articles for historical reasons. The information in section 4 is more up-to-date.)

Previously, scientists did not realize that they could continuously extract energy from gravity. In particular, they did not realize that the swing or the pendulum system could be pulled at the right time to lead out gravitational energy. The mathematics is based on the parallelogram of forces method studied in physics by every secondary school student.

The basic steps in extracting energy from gravity are:

1. Pull the pendulum periodically at the right time (more scientifically, at resonance)
2. The pendulum system will “lead out” gravitational energy due to such pull forces.
3. Many commercial swinging toys already use such pulse force mechanisms. Many of these toys use integrated circuit or intelligent chip techniques.
4. If the swinging arm of such a toy were replaced by a copper wire and the copper wire were placed in between the two poles of a permanent magnet, the swinging motion will generate electricity.
5. The swinging motion would slow down as the kinetic energy was converted into electrical energy. However, the pulse force and the lead out additional gravitational force would accelerate it again.

The pendulum system with pulse force mechanism can thus lead out gravitational energy and become the most primitive form of energy from gravity machines. However, the energy lead out was too small to be of practical use. Bill Mehes tried to store the energy in capacitors. Detailed discussions are available in <http://www.overunity.com/index.php?topic=919.msg6407#msg6407>

The experiments designed by Mr. Raymond Ting illustrated this concept conclusively. Figures 5.1 and 5.2 show the details.

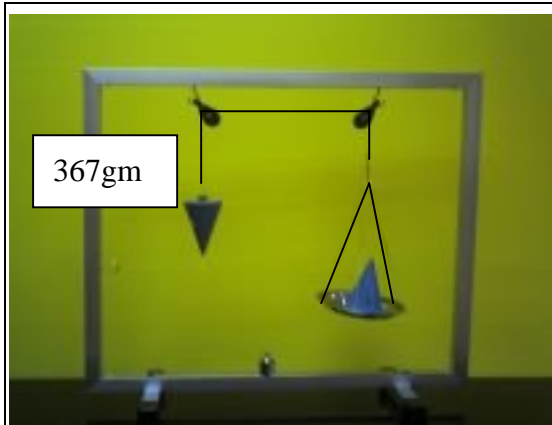


Figure 5.1 shows a pendulum system. The pendulum is first balanced by a weight of 367 units. There was no motion. A pulse force of 50 units was then added. The pendulum went up with an increase in potential energy of $367 \times H$. However, the energy supplied by the 50 units pulse force was only $50 \times H$.
(One time lead out of more energy)

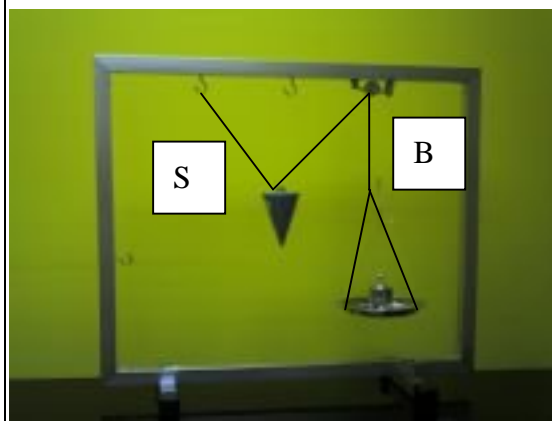


Figure 5.2 shows a nearly balanced position. The pendulum was pulled close to the middle position. In this position, half of the force is from the tension of the string S and half is from the pulse force B. The tension of the string can be attributed to gravity. This shows:
Continuous lead out of gravitational energy by the pulse force B

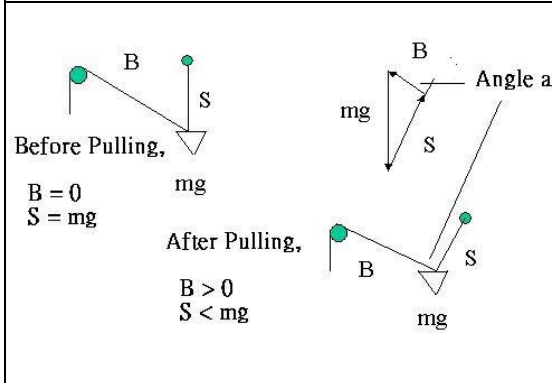


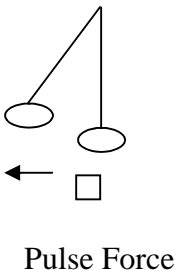
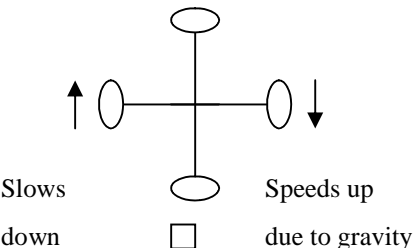
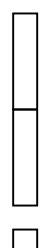
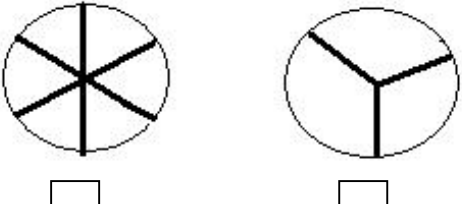
Figure 5.2a Parallelogram of Forces. This is the most important theoretical diagram. It uses the parallelogram of forces method taught in secondary schools around the world. I simply applied it to the pendulum example after learning the method 50 years ago!

In Figure 5.2a, the force and energy imparted by the pulse force B and the string S are analyzed by decomposing them into the vertical and horizontal components.

- B force (horizontal) = S force (horizontal) but in opposite direction
- B force (vertical) + S force (vertical) = mg
- B energy (horizontal) = B force (horizontal) x horizontal displacement
- S energy (horizontal) = S force (horizontal) x 0
 (displacement not in direction of force but energy is stored – ready to be used on swinging back)
- B energy (vertical) = B force (vertical) x vertical displacement (* height raised)
- S energy (vertical) = S force (vertical) x vertical displacement (* height raised)

Since S force (vertical) can be much higher than B force (vertical), a small pulse force can lead out a significant quantity of gravitational energy, Thus the theory can be proved mathematically and verified experimentally.

Once we understand that the pendulum system with pulse force can lead out gravitational energy, we can easily extend that to rotational systems. The following Figures 4.3 to 4.6 illustrate this very well.

 <p>Pulse Force</p>	<p>Figure 5.3 shows the pendulum system with a pulse force.</p> <p>From the previous Figures 5.1, 5.2 and the descriptions, we know that the pendulum system with pulse force can lead out gravitational energy.</p>
 <p>Slows down</p> <p>Speeds up due to gravity</p>	<p>Figure 5.4 shows the swing of the pendulum extended to 360 degrees.</p> <p>Instead of the oscillation motion, we now have a circular motion. However, the same theory of extracting energy from gravity via pulse force is still valid. The pulse force needs to be stronger.</p>
	<p>Figure 5.5 shows replacing the string with a rod type setup.</p> <p>The oscillation is now around the center of the rod. The same theory of extracting gravitational energy via pulse force is still valid.</p>
	<p>Figure 5.6 shows a complete wheel replacing the simple pendulum.</p> <p>A complete wheel with spoke setup can totally replace the pendulum system to extract gravitational energy with pulse force. This setup is much more efficient as the wheel can rotate at a high speed.</p>

The use of the wheel or cylinder type setup is much more efficient than the simple pendulum. Note that gravitational energy is lead out during the application of the pulse force. The moment the pulse force is cut, the lead out stops.

5.1. First generation (extract energy via cutting Earth's magnetic field)

The first generation Cosmic Energy Electricity Generator was the machine from Mr. Sung Tim Fat. It consisted of 3 cylinders spinning with the axle in the vertical direction. Each cylinder has magnetic and magnetic shielding material. The rotation essentially cut the horizontal component of the magnetic field of the Earth. The first cylinder generated enough energy to supply the pulse force to drive the second cylinder. The second cylinder generated enough energy to supply the pulse force to drive the third cylinder. The third cylinder generated 400 watts – enough to supply the pulse force to drive the first cylinder and more.

The file AVSEQ02.DAT shows both the first and the second-generation electricity generators in a demonstration in 2000. A separate starting motor was used. The first-generation was relatively bulky. See the China Patent Office Website at <http://www.sipo.gov.cn/sipo/default.htm> Patent Number 99126283.2 for details.

Development of the first generation unit was abandoned. It was essentially rotation of magnets (both permanent and electromagnets) in a magnetic field. We now know that it is similar in principle to the Minato Wheel, the Bedini, and the Joseph Newman systems.

5.2. Second generation (extract energy via gravity)

The second generation Cosmic Energy Electricity Generator was also a machine from Mr. Sung Tim Fat. It essentially was the first generation set up in the horizontal direction. The axis of rotation was horizontal. This effectively used both the vertical component of the magnetic field of the Earth and the gravitational field of the Earth. The output was 20,000 watts. Figures 5.7 and 5.8 show the differences between the first and second generation.

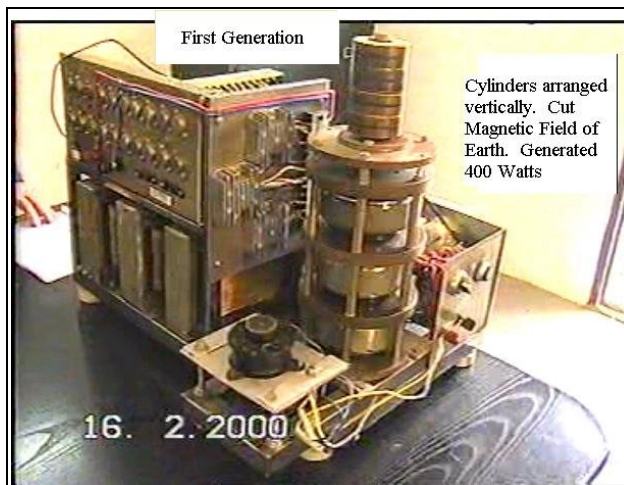


Figure 5.7 shows the First Generation

Mr. Sung produced the video in February 2000. The video showed that the generator could support a lamp, a fan and an electrical drill.

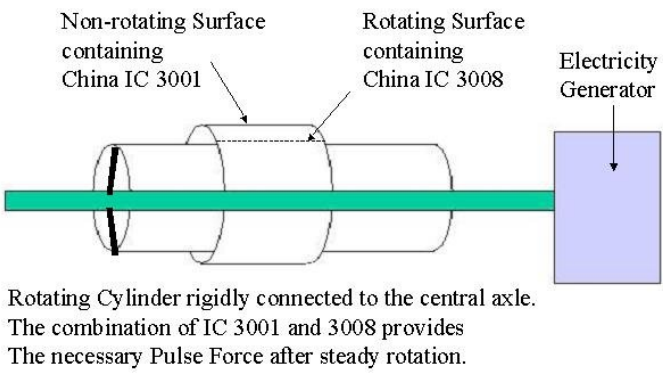



Figure 5.8 shows the second generation unit

The second generation could generate 20,000 watts. Unfortunately, Mr. Sung went out of funds and borrowed from the black market. The consequence was that he ended up in heavy debt and had to hide from the moneylenders.

5.3. Third generation (use of intelligent chips)

The third generation was from Dr. Liang Xingren. Dr. Liang got the generator from Mr. Sung and improved it. He used intelligent chips and integrated circuits to provide the pulse force. The car could provide 188 horsepower and was demonstrated in 2003. Figures 5.9 and 5.10 show the details.

 <p>Non-rotating Surface containing China IC 3001</p> <p>Rotating Surface containing China IC 3008</p> <p>Electricity Generator</p> <p>Rotating Cylinder rigidly connected to the central axle. The combination of IC 3001 and 3008 provides The necessary Pulse Force after steady rotation.</p>	<p>Figure 5.9 The Engine behind the Dr. Liang Car.</p> <p>It consists of two cylinders with ICs to provide the Pulse Force. The disadvantage was loss of power when climbing steep slopes.</p>
	<p>Figure 5.10 The Car that requires no fuel</p> <p>The details could be seen in the video AVSEQ01.DAT.</p>

Dr. Liang made a major mistake in his raising of funds. He authorized many agents to help him. Many of these agents made false promises to investors. When Dr. Liang tried to present his inventions in Dec 2004, many angry investors filed lawsuits against him and his agents. The show was cancelled.

I believe that Dr. Liang should be rescued. His invention and ours will create phenomenal wealth for China and the rest of the world. See China patent application number 01123526.8 for details. Ms. Forever Yuen translated the Liang patent into English. She also edited and commented on the videos. See her posts online at www.overunity.com.

5.4. Fourth generation (extract energy via changes of magnetic flux)

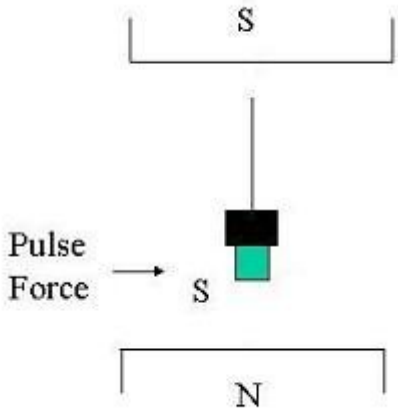
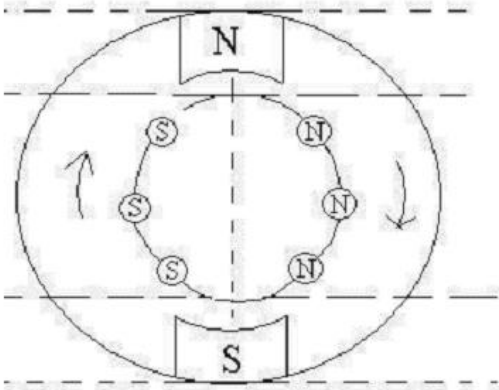
After we understood the use of rotation to extract energy from gravitational or magnetic fields, we started to investigate whether we could use vibration or no vibration at all. The answers to both questions were yes. The demonstration of a vibration device was from Taiwan using ocean waves. The description of a non-vibrating device came from US patent 6,326,718. One of the inventors of that US patent is Dr. Tom Bearden who is well known in the over-unity research field. The non-vibrating device used changes in magnetic flux as the pulse force. Figures 5.11 and 5.12 show the details. Figure 5.12 uses the figure from the Lee-Sung-Tseung China patent.

	<p>Figure 5.11 shows a vibration system.</p> <p>A practical implementation was a vibration system using ocean waves as power from an inventor in Taiwan.</p>
	<p>Figure 5.12 shows a non-vibration system</p> <p>S supplies power to 1 which provides AC current via G to coils A and B. 3 is a permanent magnet to provide added magnetic flux to 2 and then to coils E and F. E and F provide AC power via D to 1. The output power from E and F is higher than that from A and B</p>

The advantage of this technique is that the size of the generator can be very small. However, the development is in early stages and much more effort is required to turn it into a usable product. Lee Cheung Kin has been working with a well-funded Japanese Company since late 2006 and believes that working products will come out soon.

5.5. Fifth generation (improving the third generation over 100 times)

The fifth generation came as a flash of brilliance from Mr. Lee Cheung Kin. We were trying to solve the slope-climbing problem of the Dr. Liang car. With pure gravitational force as source of power, the power decreases when the car climbs up a steep slope. If the outer cylinder of the Dr. Liang engine were replaced by a magnetic field and the intelligent chips in the inner rotating cylinder changed polarity at the highest and lowest positions, the problem would be solved with great increase in power at the same time. Figures 5.13 and 5.14 show the details.

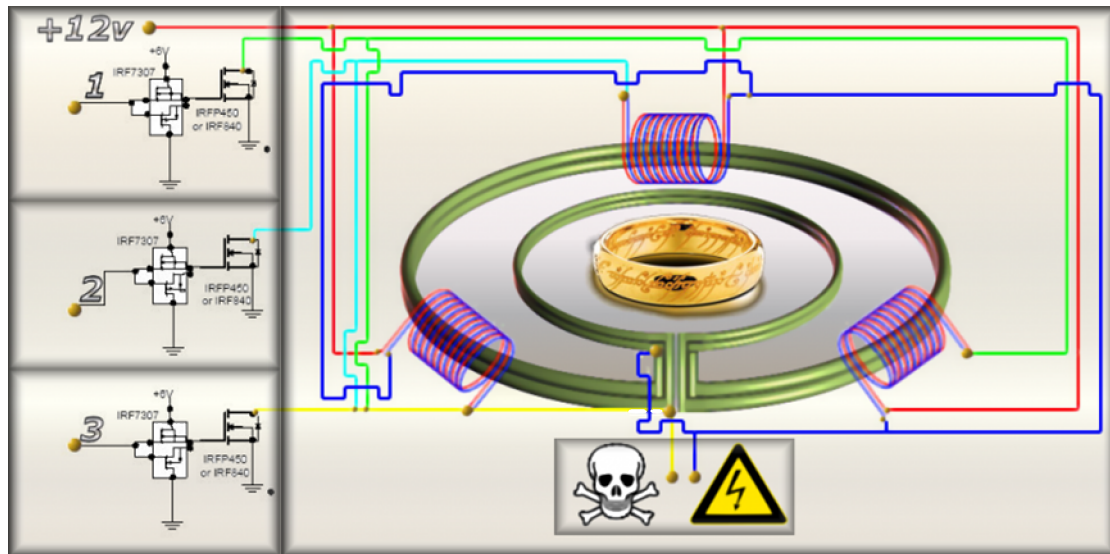
	<p>Figure 5.13 shows the enhancement of gravity with magnetic field</p> <p>The magnetic pendulum has magnetic shielding material at the top. When such a pendulum swings under the pulse force, both gravitational and magnetic energies are extracted.</p> <p>(The equivalent gravitational constant can be less if the shielded magnet has N pole exposed. The consequence will be the subject of another report.)</p>
	<p>Figure 5.14 shows the improvement over the Dr. Liang Engine</p> <p>The intelligent chips at the outer cylinder are replaced by a magnetic field. The ICs in the inner cylinder are programmed so that they are N poles on one side and S poles on the other to provide a clockwise pulse force. The magnetic field can be very strong and all IC chips contribute to the pulse force.</p>

6. Explaining the operation of the TPU (for comparison)

This part is reproduced as part of the historical record. This file was modified from the TPU description file written in August 2007. The key concepts from the Lee-Tseung Lead Out theory that can be applied directly to the Toroidal Power Unit are as follows:

1. The law of conservation of energy is not violated. The source of energy is the electron motion energy already surrounding and interacting with us.
2. The pulse force required comes from the oscillator circuits of the TPU. The correct resonance frequency or its harmonics is required.
3. When the oscillator or pulse current passes through the Toroidal coils, electron motion or electrical current is induced. These pulses keep accelerating the electrons leading out more electron motion energy.
4. At this point, we should mention the Wang Shum Ho four-legged stool experiment. (see www.energyfromair.com/beijing/wang3a.htm for details.) A rotating object such as the Earth rotating around the Sun requires Centripetal Force but no energy (no work is done, as the displacement is perpendicular to the force). Any addition of energy will increase the speed of rotation or change the radius of the orbit.
5. The pulse or KICK in the TPU leads out additional electron motion energy. The actual quantity of lead out energy depends on the frequency of the KICK, the diameter of the Toroidal coil, the strength of the KICK, etc.
6. The feedback of the TPU can be via the same KICK coils or via separate feedback coils. I believe some people posting information on the OverUnity.com forum focus on using the same KICK coil. It may be possible to use one frequency to KICK and another harmonic frequency to feedback or collect. This may explain the special effect when two different frequencies are used.
7. Looking at the diagram further, it may be possible for the electric or electrostatic field to play a much greater part. A gap preventing direct electron flow may cause the built-up of the electric potential. Thus energy may be drained out directly.
8. Once started, the TPU is essentially in a constant operational state. It does not rotate like the Wang device. However, the KICKs occur all the time, leading out additional energy. The accelerating electrons might cause deviation from the resonance condition – preventing the TPU from self-destruction.

The following diagram is from the posts in the OverUnity.com Forum. They have a group of dedicated persons replicating and improving the TPU invention originally invented by Steven Mark. The open sharing of information is highly appreciated. There are already many videos on youtube. An example as outlined by Otto, and Roberto is available online at <http://youtube.com/watch?v=tPwQ6AzBSko>

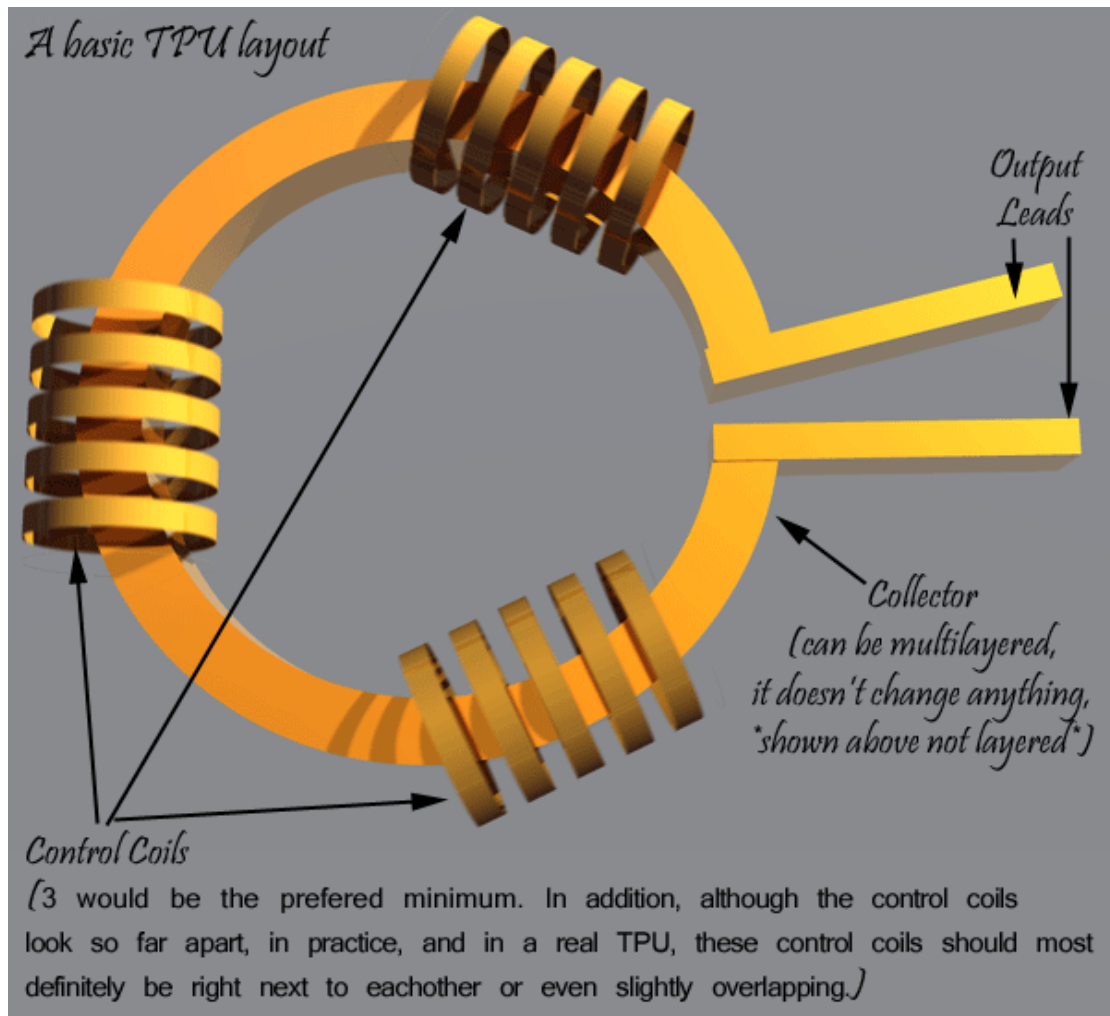


If a pulsing current is passing through the coils, electricity will flow in the toroidal copper ring according to Lenz's Law. Note that pulsing current is different from AC current. In alternating current (AC) environment, the voltage fluctuates from positive to negative. In a pulsing current environment, the voltage is on and off but always in the same direction.

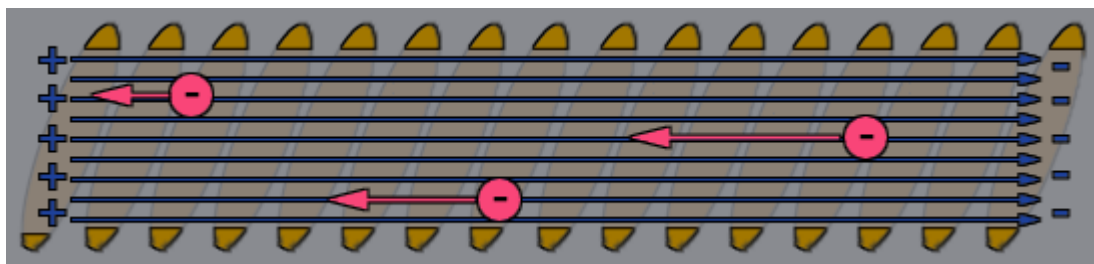
The pulsing current is not the only source of input energy. It will lead out additional electron motion energy. In the TPU, the energy can be extracted via the pulsing coils or via the electric potential across the gap. Two frequencies are often used. (One may be used for pulsing, the other for collecting or feedback.)

Tao of the OverUnity.com forum produced some very good explanation diagrams. The first one shows the basic layout of the TPU. Three control coils are shown. The KICK or pulse on control coil A will actually accelerate and move the electrons towards control coil B. If the timing is right, the KICK or pulse on control coil B will further accelerate and move the electrons towards control coil C. If the timing is right, the KICK on control coil C will further accelerate and move the electrons

towards control coil A. This looping effect will keep adding and leading out more energy into the system.



The other diagram from Tao is also informative:



The control coil produces an electric field and thus causes the electrons to move. This is analogous to the particle accelerators such as the cyclotron in high-energy physics. The one directional movement of electrons is effectively direct current. Since the KICK or pulse of the control coil is not the only input (additional electron motion energy is lead out), more energy is available for the collector to extract from

the system.

One potential problem mentioned by Steven Mark is that the KICK frequency must be slightly different from the ideal resonance frequency. If the KICK frequency is exact, the resonance effect (similar to the collapsing bridge under same stepping frequency by the soldiers) will destroy the TPU. In other words, too much electron motion energy will be lead out.

One solution is the constant monitoring and controlling of the KICK frequency. Even a slight deviation will get away from the resonance condition. Much less electron motion energy will be lead out.

If all the right controls are in place, the TPU can be started and then self-maintained. It becomes a perpetual motion machine (leading out the immersed electron motion energy) with no movement (some vibration will be detected because of the KICKs). It can act as a battery that will never need charging.

My earlier thought of size reduction might be misleading. The power output from a TPU will depend on its diameter. Too tiny a ring may not generate the power required.

Another point to emphasize is that the pulse motor also needs the correct resonance frequency to function. The whole family of TPU, Pulse Motor, Bedini, Minato, Joseph Newman, John Searl, Liang and Chao Cosmic Energy Machines are related. A good comparison study would be helpful in understanding the operating principles of these units. Some common elements such as pulsing circuit, permanent and/or electromagnetic positioning, magnetic shielding, feedback circuit, resonance tuning, output monitoring and control, etc., may result.

(I hope Tsing Hua University in Beijing has started on such a systematic research. Lee, Wang and I are all honorary guest lecturers. Harvard, MIT and other top universities may have also started already. Lee informed me that the Energy Department of China in Beijing has a research laboratory working on all known Cosmic Energy Machines. It is like telling the World that USA has advanced projects on UFOs at or near Area 51.)

7. Summary

The summary is modified from our PCT patent application. (PCT/IB05/00138)

This invention uses the corrected theory of the pendulum to extract energy from gravitational fields. A pulse force applied to a pendulum can lead out gravitational energy. The energy can be changed into electrical energy such as allowing the metallic string of the pendulum to cut a magnetic field. The oscillation motion will slow down but the pulse force will lead out gravitational energy to speed it up again. The oscillation motion can be changed into a rotational motion for a more efficient operation. The same technique can be applied to magnetic or electrical fields.

We have effectively solved the global energy crisis. Oil is no longer a strategic material and there is no need to go to war over it. World peace is one step closer. Modern wealth will be the quality and quantity of meaningful economic activities. Such activities are infinite. The world can embark on the path leading to a peaceful society. Ignorance and poverty will become a distant memory.

I am aware that some persons may be offended with this article. They have spent much time and energy on the Gravity Wheel, the TPU or other cosmic energy machines. I appreciate and praise their efforts. However, the cosmic energy machines field is very new. It is only beginning to be accepted in China. Wang Shum Ho worked on it for over 40 years and only gained recognition recently. Joseph Newman worked on it in USA for similar length and is still meeting strong opposition.

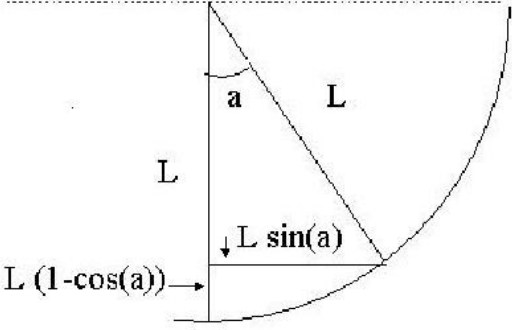
Lee and I have already given all our patent rights to the Chinese government and people. We have no financial stake in the success of these cosmic energy inventions. Others more brilliant than us will improve or even replace the lead out theory. Our purpose in writing this article is to benefit the world.

One piece of information worth mentioning is the book related to “Winning the Global Economic War”. It was translated into Vietnamese by the Nephew of the most famous general of Vietnam who defeated the French. 武元甲. Some of the Chinese Officials learned about it from Vietnam!

See <http://www.energyuformair.com/thebook.htm>. The last section is in English. Please also read the thread “The New Order” in <http://forum.go-here.nl>.

Appendix A - The mathematical calculation of forces on the pendulum bob

Calculation of second and subsequent pulls

<p style="text-align: center;"><u>Displacement Considerations</u></p>  <p>The diagram shows a pendulum bob displaced at an angle a from the vertical. The string length is L. The vertical displacement is labeled $L(1-\cos(a))$ and the horizontal displacement is labeled $L \sin(a)$.</p>	<p>The calculation of displacement can be exact. We can find out the vertical and horizontal displacements at 30 degrees and at 32 degrees. The difference will be the exact vertical and horizontal displacement from 30 to 32 degrees</p>
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Displacement at 30 degrees

$$\text{Horizontal} = L \sin(30) = 0.5L$$

$$\text{Vertical} = L(1-\cos(30)) = 0.133975L$$

Displacement at 32 degrees

$$\text{Horizontal} = L \sin(32) = 0.529919L$$

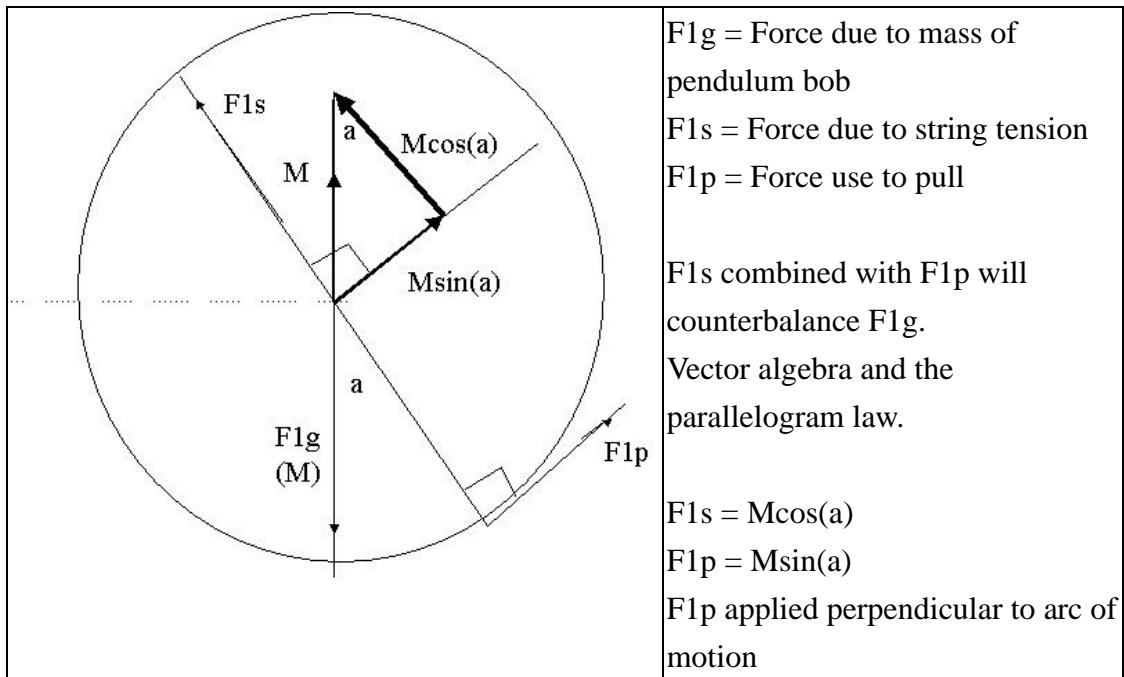
$$\text{Vertical} = L(1-\cos(32)) = 0.151952L$$

Displacement from 30 to 32 degrees

$$\text{Horizontal} = 0.529919L - 0.5L = 0.029919L$$

$$\text{Vertical} = 0.151962L - 0.133975L = 0.017977L$$

Force in direction of displacement considerations



When we consider what are the forces in the direction of displacement, we get

Horizontally: Hori component of $F1p = M\sin(a)\cos(a)$

Vertically: Vert component of $F1s +$ Vert component of $F1p$

$$= M\cos(a)\cos(a) + M\sin(a)\sin(a)$$

$$= M(\cos(a)\cos(a) + \sin(a)\sin(a))$$

$$= M$$

To be more exact, the horizontal component of pull $F1p$ will be equal and opposite to the horizontal component of the string tension $F1s$. However, when we consider work done, the only force that is in direction of displacement is $F1p$. $F1s$ is in opposite direction and can be considered as energy stored via the tension of the string.

Similarly, the vertical forces in the upward direction (in direction of displacement) are from $F1s$ and $F1p$. It should be clear from the diagram that both $F1s$ and $F1p$ contributed to the lifting of the pendulum bob.

Energy considerations in pulling the pendulum bob from 30 to 32 degrees.

We can consider the work done or energy stored in the vertical and in the horizontal direction separately.

The vertical and horizontal displacements are exact mathematical calculations. No approximation is needed. However, the Forces at 30, 31 and 32 degrees are slightly different. Since we are willing to accept approximations to bring out the physical meaning, we shall use the largest pull force at 32 degrees.

$$\begin{aligned}\text{Horizontal energy of the pull force} &= M\sin(32)\cos(32) * 0.029919L \\ &= 0.013446 * ML\end{aligned}$$

$$\begin{aligned}\text{Vertical energy of the pull force} &= M\sin(32)\sin(32) * 0.017977L \\ &= 0.005048 * ML\end{aligned}$$

$$\text{Total work done or energy supplied by pull force} = 0.018494 * ML$$

$$\begin{aligned}\text{lead out energy} &= \text{vertical work done by tension of string } F_1s \\ &= M\cos(32)\cos(32) * 0.017977L \\ &= 0.012929 * ML\end{aligned}$$

$$\begin{aligned}\text{COP} &= \text{total output energy} / \text{input energy} \\ &= (0.018494 * ML + 0.012929 * ML) / 0.018494 * ML \\ &= 1.699096 \\ &= 1.7 \text{ (even higher than 1.5!)}\end{aligned}$$