

Apparent Source Theory - a link between the Michelson-Morley experiment and free energy, reactionless thrust, 'anti-gravity', the Biefeld-Brown effect

Henok Tadesse, Electrical Engineer, BSc.
Ethiopia, Debrezeit, P.O Box 412
Mobile: +251 910 751339; email entkidmt@yahoo.com or wchmar@gmail.com
16 Nov 2016

Abstract

Apparent Source Theory (AST) is a new interpretation of absolute motion already proposed by this author. AST easily explains many light speed experiments, including the Michelson-Morley experiment, the Sagnac effect and moving source experiments. AST has also been extended to electrostatics, revealing a mysterious nature of electrostatic fields. After I completed developing the major part of AST, I came across an idea that, if two oppositely charged spheres are fixed to the two ends of a rigid rod , and the system is in absolute motion, according to AST, the charge-rod system will be subjected to a net electrostatic force and hence accelerate, implying free energy and reactionless thrust ! Obviously such a possibility would be very exciting, if it really existed. But I was also disappointed because, if free energy doesn't really exist, this would imply that my theory (AST) is wrong. I had never heard of such an effect before. Later I found in the internet that such an effect in fact exists and is known as the Biefeld-Brown effect and with unknown origin. Although AST neatly predicts this effect and can be a very compelling explanation, I feel that it still needs to be developed . The purpose of this paper is to invite and inspire theoretical and experimental researchers to work on this exciting technology. Exciting possibilities have been presented for this purpose. For example, according to AST, it is possible to produce by a small free energy device, made by stacking large number of capacitors, a net force that can lift an object as massive as an aircraft carrier. It is shown that the net force on the capacitor is directly proportional to the square of the applied voltage, inversely proportional to the square of plate separation distance, directly proportional to the area of the capacitor plates, directly proportional to the relative permittivity of the dielectric material, and directly proportional to absolute velocity for absolute velocities much less than the speed of light. That the net force is directly proportional to the square of the electric field strength implies that dielectric materials with the highest dielectric strength are vital to the realization of free energy devices. Diamond is the most promising material for this, with dielectric strength of 2000 MV/m.

Introduction

I have already proposed Apparent Source Theory (AST) in several papers [1][2][3][4]. AST successfully explains almost all light speed experiments including the Michelson-Morley experiment, the Sagnac effect and moving source experiments. AST was also extended to electrostatics and revealed a mysterious nature of electrostatic fields that would never have been discovered otherwise.

After I completed developing the major part of AST, one day, as I was just pondering on the application of AST in electrostatics, I suddenly came across an idea. If two oppositely charged

spheres are attached to the ends of a rigid, absolutely moving rod, according to AST, the system (charge-rod system) will be subjected to a NET electrostatic force and will start to accelerate!

With this I was both excited and disappointed at the same time. I was disappointed because, if free energy doesn't really exist, this would be devastating to my AST theory.

AST predicts that a parallel plate capacitor charged to a high voltage will, in absolute motion, develop a significant net force. I thought " how is it possible for such an effect to exist without being noticed, as people have been working on high voltage capacitors for nearly a century ? If such an effect existed, physicists would have long reported it " . I decided to test this myself by constructing a parallel plate capacitor and a high voltage source.

An idea happened to me to search on the internet if such an effect existed. I googled " anomalous behavior of high voltage capacitors " . To my surprise, I found a lot of papers and websites discussing this effect, including[7]. I learned that the effect is long known as the Biefeld-Brown effect. However, the origin of this effect is completely unknown to this date. Searching further in the internet I also learned about ' ion lifters ' . I had never heard of such effects before. I had never considered (I even ridiculed) the idea of free energy.

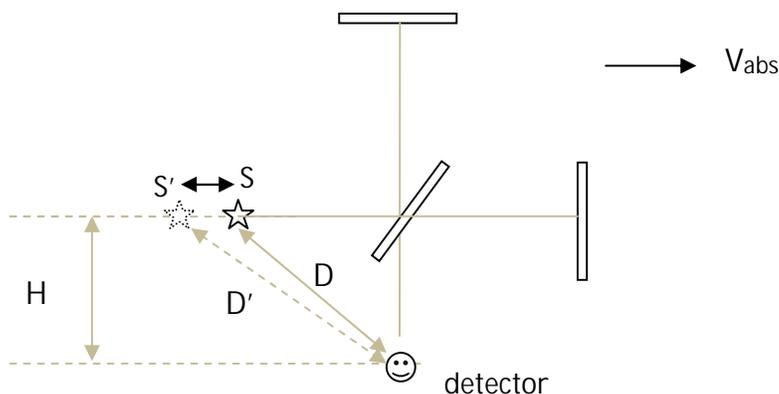
The purpose of this paper is to announce a compelling, yet incomplete, prediction and explanation of free energy/ reactionless thrust and to invite and inspire theoretical and experimental researchers to work on this effect. A brief story on my decision to publish this paper on the internet is found at the end of this paper.

We will first introduce AST briefly. A comprehensive description is found at [1][2][3][4].

Apparent Source Theory

Let us see how AST can easily explain the Michelson-Morley (MM) experiment null result.

Consider the MM experiment setup below.



Perhaps the best way of introducing AST explanation of Michelson-Morley experiment is to start with a simple question:

What is the effect of slight physical change of the position of the light source on the interference fringes?

The logical answer to this question is that no (significant) fringe shift will occur. For example, if the light source is slightly shifted backwards as shown, intuitively, both the longitudinal and transverse light beams will be affected identically and hence no fringe shift will occur. Likewise, slightly changing the position of the light source to any position (up, down, left, right, forward, backward, ...) will not result in any (significant) fringe shift.

The trick of nature that eluded physicists for more than a century is this:

The effect of absolute motion of the Michelson-Morley interferometer is just to create an apparent change in the position of the light source relative to the observer/detector. This apparent change in source position will not result in any (significant) fringe shift for the same reason that an actual, physical change of source position will not result in any (significant) fringe shift. The speed of light is constant relative to the apparent source.

This simple yet subtle trick explains almost all light speed experiments including the Michelson-Morley experiments, the Sagnac effect, the Silvertooth experiment, the Marinov experiment, the Roland DeWitte experiment, the Bryan G Wallace experiment and moving source and moving mirror experiments.

The apparent position of the light source is determined from the following equations[1].

$$\frac{D'}{c} = \frac{\Delta}{V_{abs}}$$

and

$$\overline{D'^2 - H^2} - \overline{D^2 - H^2} =$$

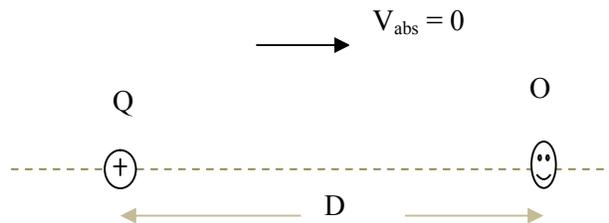
This is a new interpretation of absolute motion. The scientific community was stuck with a presumption that absolute motion is motion relative to the ether. The ether doesn't exist but absolute motion does exist.

The Michelson-Morley experiment is the evidence against the existence of the ether. The Silvertooth, the Marinov and the Roland DeWitte experiments are evidences for the existence of absolute motion. The Michelson-Morley experiment was capable of detecting something that never existed, the ether, but was incapable of detecting absolute motion, which really exists.

Apparent Source Theory and electrostatics

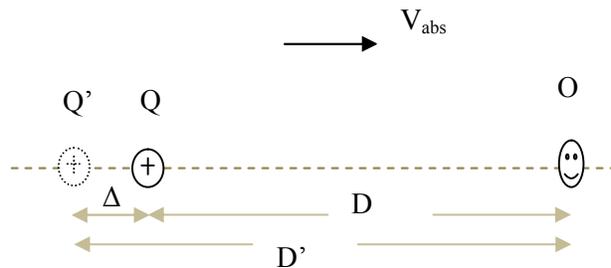
After I was able to explain many light speed experiments by AST, I started working on static fields: electrostatic fields and gravitation. Two articles [6][7] were especially important in guiding me in my discovery of the mysterious nature of electrostatic fields. Apparent Source Theory governs not only the speed of light, but also electrostatics. ‘Source’ is a light source or a source of electrostatic field (i.e. charge). A comprehensive discussion on this is found in [1]. We will present only the results here.

First consider a charge Q and an observer O both at absolute rest.



In this case, the electric field caused by charge Q at point O is determined by Coulomb’s law.

Now consider absolutely co-moving charge and observer, with the absolute velocity directed to the right as shown below.



According to AST, although the charge is physically at Q, it appears to the observer that the charge is at Q’. There will be an apparent change of charge position as seen by the observer. The charge appears to have shifted backwards, away from the observer, due to absolute motion.

The apparent position (D') of the charge and the apparent change in charge position (Δ) are computed from the following equations[1].

$$\frac{D'}{c} = \frac{\Delta}{V_{abs}}$$

and

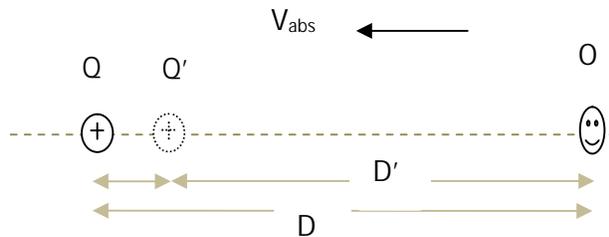
$$D' = D + \Delta$$

The observer uses the distance D' , and not the distance D , to correctly predict the electric field strength at point O by using Coulomb's law. Actually Coulomb's law should also be modified for absolutely moving charge, by a factor of $(1 - V_{abs}^2 / c^2)$ as will be seen later, for the case of charge-observer line parallel to absolute velocity. If the observer experimentally measures the electric field at point O , he/she will get an electric field intensity corresponding to distance D' and not to distance D . In this case the observer will measure the electric field intensity which will be less than the electric field he measures when the charge and the observer are at absolute rest, for the same distance D . Coulomb's law applies only to a charge that is at absolute rest as it is. This means that we can use the actual, physical distance (D) between the charge and the point of observation in the Coulomb's formula only if the charge is at absolute rest. If the charge is in absolute motion we should use the apparent distance D' .

From the above equations

$$D' = D \frac{c}{c - V_{abs}}$$

If absolute velocity is directed to the left, the situation will be as follows.



The apparent position (D') of the charge and the apparent change in charge position (Δ) is computed as follows.

$$\frac{D'}{c} = \frac{\Delta}{V_{abs}}$$

and

$$D = D' + \Delta$$

In this case the observer will measure the electric field intensity which will be greater than the electric field he measures when the charge and the observer are at absolute rest, for the same distance D . The charge appears to have shifted towards the observer.

From the above equations,

$$D' = D \frac{c}{c + V_{abs}}$$

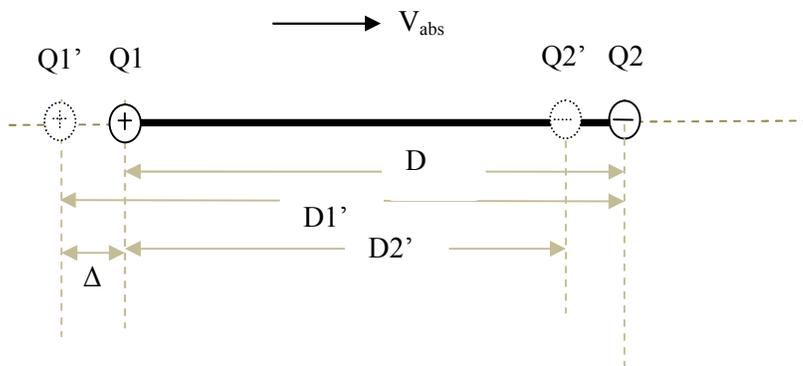
The procedure of analysis for absolutely co-moving charge and observer, for the case of charge-observer line parallel to absolute velocity vector, is:

1. replace the real charge Q by an apparent charge Q'
2. apply Coulomb's law to the apparent charge to compute the electrostatic force at O
3. multiply the force obtained in (2) by the factor:

$$1 - \frac{V_{abs}^2}{c^2}$$

Absolutely co-moving charges

Consider two opposite point charges attached to the ends of a rigid rod, thus forming a rigid charge-rod-charge system.



D is the actual, physical distance between real charges Q_1 and Q_2 . D_1' is the apparent distance of Q_1 as seen by Q_2 . We can also say that D_1' is the distance of apparent charge Q_1' from real charge Q_2 . D_2' is the apparent distance of Q_2 as seen by Q_1 . We can also say that D_2' is the distance of apparent charge Q_2' from real charge Q_1 .

Now the electrostatic force exerted by Q_1 on Q_2 will be:

$$F_{12} = \frac{1}{4\pi\epsilon_0} \frac{Q_1 Q_2}{(D_1')^2}$$

The electrostatic force exerted by Q_2 on Q_1 will be:

$$F_{21} = \frac{1}{4\pi\epsilon_0} \frac{Q_1 Q_2}{(D_2')^2}$$

But

$$D1' = D \frac{c}{c - V_{abs}}$$

and

$$D2' = D \frac{c}{c + V_{abs}}$$

The above equations for D1' and D2' result from new interpretations of 'speed' of electrostatic fields proposed in my paper[1].

The net force on the rod will be:

$$F = F_{21} - F_{12} = \frac{1}{4\pi\epsilon_0} \frac{Q1 Q2}{(D2')^2} - \frac{1}{4\pi\epsilon_0} \frac{Q1 Q2}{(D1')^2} = \frac{1}{4\pi\epsilon_0} Q1 Q2 \left(\frac{1}{(D2')^2} - \frac{1}{(D1')^2} \right)$$

$$F = \frac{1}{4\pi\epsilon_0} \frac{Q1 Q2}{D^2} \left(\frac{4 V_{abs}}{c} \right)$$

There is a net force on the system ! The force is directed in the direction of the absolute velocity.

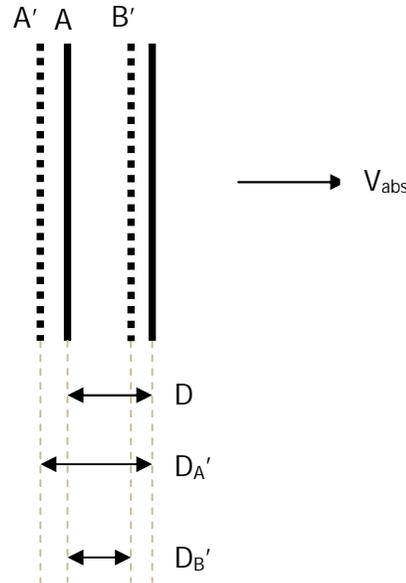
Now consider a parallel plate charged capacitor, with plates named A and B, and with an air (vacuum) dielectric. Assume that the capacitor is absolutely moving to the right. For ease of discussion, assume that the capacitor dimensions are such that the electric field lines are parallel to each other and perpendicular to the capacitor surfaces.

A' is the apparent position of plate A as seen by plate B. And B' is the apparent position of plate B as seen by plate A.

The electrostatic force between the plates of a parallel plate capacitor is given by:

$$F = \frac{\epsilon_0 A V^2}{2D^2} = \frac{\epsilon_0 A}{2} \frac{V^2}{D^2}$$

where V is the potential difference across the capacitor, D is the plate separation distance and A is the area of each plate. This is the formula for the force exerted by one plate on the other.



D_A' is the apparent distance of plate A as seen by plate B. D_B' is the apparent distance of plate B as seen by plate A. Strict application of AST shows that, to a point charge on one capacitor plate the opposite plate is not a plane but somewhat curved. However, we can use the above simplistic assumption to a good approximation.

Now we determine the force exerted by plate A on plate B.

$$F_{AB} = \frac{\epsilon_0 A}{2} \frac{V^2}{(D_A')^2}$$

And the force exerted by plate B on plate A will be:

$$F_{BA} = \frac{\epsilon_0 A}{2} \frac{V^2}{(D_B')^2}$$

The NET force on the capacitor will be:

$$F = F_{BA} - F_{AB} = \frac{\epsilon_0 A}{2} \frac{V^2}{(D_B')^2} - \frac{\epsilon_0 A}{2} \frac{V^2}{(D_A')^2}$$

But

$$D_A' = D \frac{c}{c - V_{abs}} \quad \text{and} \quad D_B' = D \frac{c}{c + V_{abs}}$$

From which,

$$-F = \frac{\epsilon_0 A}{2} V^2 \left(\frac{1}{(D_B')^2} - \frac{1}{(D_A')^2} \right)$$

$$F = \frac{\epsilon_0 A}{2D^2} \frac{V^2}{c} \frac{4V_{abs}}{c} = \frac{\epsilon_0 A}{2} \left(\frac{V}{D} \right)^2 \frac{4V_{abs}}{c} = \frac{\epsilon_0 A}{2} E^2 \frac{4V_{abs}}{c}$$

where $E = V/D$ is the electric field strength.

If there is a dielectric between the plates, the 'speed' of the electrostatic field (c) is modified by the dielectric constant ϵ .

$$c' = \frac{c}{\epsilon}$$

Therefore

$$F = \frac{\epsilon_0 A}{2} \frac{V^2}{D^2} \frac{4V_{abs}}{c'} = \frac{\epsilon_0 A}{2} \frac{V^2}{D^2} \frac{4V_{abs}}{\left(\frac{c}{\epsilon}\right)} = \frac{\epsilon_0 \epsilon A}{2} \frac{V^2}{D^2} \frac{4V_{abs}}{c}$$

From the above formula, we can see that the net force on the capacitor is :

- directly proportional to the square of the applied voltage
- inversely proportional to the square of plate separation distance
- directly proportional to the area of the plates
- directly proportional to the relative permittivity of the dielectric material.
- directly proportional to the absolute velocity, for $V_{abs} \ll c$

That the net force is directly proportional to the square of the electric field strength ($E = V/D$) implies that dielectric materials with the highest dielectric strength are vital to the realization of free energy devices. Diamond has the highest known dielectric strength, about 2000 MV/m [9]. Mylar also has a high dielectric strength, typically 500 MV/m at DC, for small thicknesses.

The above formula will be further modified by a factor [1].

$$F = \left(\frac{\epsilon_0 \epsilon A}{2} \frac{V^2}{D^2} \frac{4V_{abs}}{c} \right) \left(1 - \frac{V_{abs}^2}{c^2} \right)$$

For $V_{abs} \ll c$, the factor $(1 - V_{abs}^2/c^2) \approx 1$.

Discussion

Consider a parallel plate capacitor with diamond as the dielectric material.

$$A = 1\text{m}^2, \quad \epsilon = 5.5, \quad \text{dielectric strength} = 2000 \text{ MV/m}$$

The absolute velocity of the earth, $V_{\text{abs}} = 390 \text{ Km/s}$ and $c = 300000 \text{ Km/s}$, $V_{\text{abs}} \ll c$

$$F = \frac{\epsilon_0 \epsilon A}{2} E^2 \frac{4V_{\text{abs}}}{c} = \frac{8.85 \cdot 10^{-12} * 5.5}{2} * (2000 \cdot 10^6)^2 * \frac{4 \cdot 390}{300000}$$
$$F = 506220 \text{ N} = 50622 \text{ Kgf}$$

This is an enormous net force from a single capacitor !

Now let us push the limits even further. We can increase the net force enormously by stacking up hundreds of thousands of such capacitors connected in parallel to a voltage source. Assume each capacitor has a thickness of 50 nm, with each plate 10nm thick and the dielectric 30nm thick. A voltage of about 60 V is applied to the capacitors for maximum electric field intensity of 2000 MV/m. If we construct a capacitor stack containing 20 million such capacitors (the total thickness of the stacked capacitor will be 1m), the net force will be:

$$F = 50622 \cdot 20000000 \text{ Kgf} = 1 \text{ trillion Kgf} !$$

This is the weight of about 10,000 aircraft carriers.

Thus, according to AST, a free energy device that has a size of only 1m^3 can produce a net force that can lift 10,000 aircraft carriers. Even if one part in a million of this were true, all our energy needs would be fulfilled. The purpose of this calculation is just to inspire researchers on what is possible if the AST prediction is correct. Although AST neatly predicts free energy and reactionless thrust, it may not be complete and needs development.

Experimental evidences

One of the evidences for AST in predicting free energy is the report by Thomas Brown that the effect continuously varies with time, including variation with sidereal time, indicating connection between the effect and Earth's absolute motion.

However, AST doesn't explain (or I haven't figured out yet) why the force is always towards the smaller electrode, in the case of asymmetric capacitors. The other issue is that the force is mostly directed upwards relative to the Earth's surface, although in some experiments a downward force has also been observed. According to AST, the direction of the force depends only on the direction of the Earth's absolute velocity in space and the orientation of the device relative to the absolute velocity, which is towards Leo constellation, and is independent of polarity of the electrodes.

In [8] it has been reported that the effect ceases in a Faraday cage. At this point I propose that the Silvertooth and the Marinov experiments also be repeated in a Faraday cage.

Another variable is the frequency of the applied voltage. The experiment should be performed with DC, AC, RF and microwave frequencies. It should be noted that dielectric strength drastically drops with frequency. For example, if the dielectric strength is reduced by a factor of 10, the maximum electric field intensity before dielectric breakdown will also drop by a factor of 10. This would reduce the net force by a factor of 100.

Note that 'anti-gravity' is mentioned in this paper just to imply that we can overcome the force of gravity by reactionless thrust, and not to mean 'cancelling' of the gravitational field.

What is absolute motion ?

AST simply proposes a new interpretation of absolute motion by discarding the ether. It doesn't address the 'relative to what ?' question. If absolute motion is not motion relative to the ether, then relative to what is absolute motion determined ? I propose that, fundamentally, absolute motion is just relative motion. I have already proposed in [1] that absolute velocity is the resultant of mass-ratio weighed velocities of an object relative to all massive objects in the universe.

Potential of a free energy, reactionless, 'anti-gravity' device

I strongly believe that AST is the correct, fundamental explanation for the Biefeld-Brown effect, although it may be incomplete. If researchers focus on this phenomenon and are able to construct a working free energy device, this would revolutionize many aspects of our life.

- it will eliminate the need for all conventional energy sources
- many industries will be drastically affected: oil and petroleum industry, auto industry, aviation industry, defence and defence industry, shipping industry, transportation, ...
- it would change our way of life. Everyone would have a free energy, cheap, small size personal space craft.
- space travel would be revolutionized, and so on.

Conclusion

A very compelling theory (AST) has been proposed that predicts free energy/reactionless thrust. However, this theory may not be complete yet. Experimental and theoretical researchers are invited to work on such an enormously important technology.

Thanks to God and Our Lady Saint Virgin Mary.

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* My decision to publish this paper on the internet was inadvertent. Once I discovered the link between AST and free energy, I aimed to continue working on the theory and perform experiments until I succeeded in constructing a working free energy device and get a patent. I was optimistic in this because AST neatly predicts free energy and reactionless thrust. I even carried out a preliminary experiment (I didn’t detect the effect, perhaps due to faulty high voltage source). However, I couldn’t explain certain experiments with AST. For example, why is the force always directed towards the smaller electrode in the case of asymmetrical capacitors ? Why is the net force mostly directed upwards, although down force has also been reported ? Perhaps it may be because Leo constellation is above the horizon most of the time in those places where the experiments have been carried out. In spite of these problems, I hoped to continue the theoretical and experimental research. Meanwhile, sadly, I lost my flash disk that contained documents that hinted on the link between AST and free energy. With this, I was forced to publish this paper on the internet, to establish priority of discovery at least. I also decided to send this article through e-mails to as many physicists/researchers as possible and also distribute it on the internet and disseminate the idea in order to discourage possible attempts to stop this research by those parties who consider free energy a threat to their interests. I have learnt that free energy innovators are constantly threatened , even with assassination sometimes. I have already sent this paper to a dozen of researchers.