

Einstein's silence to Hermann Oberth's principle of relativistic fuel-energy Inflation and thirteen unanswered relativity questions

Abstract:

The American Apollo Space Program Rocket Pioneer group member Hermann Oberth (1894-1989) proposed a Solution to Einstein's Space travel Speed Restriction-limitation at the speed of light C . Oberth argued that the Thermal-nuclear fuel-supply carried by a space ship would appreciate (inflate) in energy value in proportional relation to the kinetic energy of the space ship allowing a greater speed than the speed of light. This publication proposes an experiment to evaluate "The Hermann Oberth Principle" by using a recently Invented "Combined Rotational to Straight Line Displacement Coupled Inertial Propulsion Device Patent Applications" to attempt to propel a probe beyond the speed of light. Please reference the Authors Papers: "Newton's unfinished Theorem, The Inertial Propulsion Drive" and "The hidden Assumption within Newton's Inertial mass motion time base analysis". Please view www.mindbites.com/series/1278 lesson 8 device pendulum tests.

Proposition: Einstein's Theory of special relativity relating to the upper limit of vehicular speed is an energy constraint cleared by: "The Oberth Principle", the Physics within a moving accelerated platform (Inertial Frame) and the proven reality of Inertial Propulsion (The Reactionless Drive Reality).

Einstein never disputed the "Oberth Principle"(Never had time left to respond)

Einstein never disputed the continuity of Newton's/ Galileo's/ Hamilton's/ Newton's/ Huygens-Steiner Physics Principles on an accelerated moving platform (within an Inertial Frame) beyond the speed of light. There is no privileged Inertial frame of reference he claimed!

Einstein's Theory of special relativity postulating a limit to the upper speed of a Vehicle at " C " has never been proven in view of "The Inertial Propulsion Reality"! (The Reaction-less Drive Reality). The speed limit at " C " also conflicts with the continuity of Newton's Physics Principles within a moving accelerated platform (The Inertial Frame) at relativistic speeds. In other words: Inertial Propulsion has been proven, in contrast, Special Relativity applying to an accelerated moving platform (Inertial Frame) has never been proven. Einstein did not believe (know) Inertial Propulsion is possible, his theory did not include this possibility!

A Proposed Experiment to proof The Hermann Oberth Principle of Vehicular Nuclear-Fuel Energy Value Inflation having an uniform relationship in respect to the kinetic energy of a vehicle.

In response to Einstein's Theory of Relativity, limiting all space travel to well below the speed of light, Hermann Oberth postulated in the 1950's, a contrary argument:

The Thermal-Nuclear Fuel Energy Value within a vehicle must appreciate (inflate) in a proportional amount of the mass relativistic mass Dilation due to the Relativity Effect. Expressing this Theory in Formula a):

$$E_{\text{, nuclear-fuel}} = \text{mass}_{\text{, nuclear-fuel}}(c^2 + \frac{1}{2}v^2_{\text{, space-probe}})$$

The Relativistic vehicular mass appreciation (inflation) b):

$$\text{mass}_{\text{, v, vehicle}} = m_{\text{, 0v, vehicle}} / \sqrt{(1 - v^2_{\text{, vehicle}}/c^2_{\text{, light}})}$$

If the mass of a vehicle inflates at relativistic speeds why is the nuclear fuel energy value not inflating in proportional amount? Why is it not possible to insert formula a) into formula b)? The Author presents that there is an uncertainty in Special Relativity, because of this inability to correlate formula a) into formula b) thereby arriving at infinite energy (perpetual motion). **Accordingly, Special Relativity ought to be tested for validity!!**

The Author proposes an extension to the Oberth Principle:

The Vehicular Nuclear-Fuel energy value must appreciate (inflate) in an uniform kinetic energy dependent function, starting already, in **very** small amounts, starting from low speeds and escalate proportionately onto high speeds.

If we prove that the Nuclear=Fuel energy content-magnitude value does NOT change with elevated kinetic energy then we encounter a violation of the R. Hamiltonian Principle of energy conservation within an isolated system and we have to deal with an aspect of an energy sink! Then we have to search for the missing kinetic energy of the fuel-amount turned into energy

To prove this postulation, the Author proposes an Inertial Propulsion Space probe encompassing the author's Combined Rotational to Straight Line Coupled Inertial propulsion Device.

The current technology of the Author's Combined Rotational to Straight Line displacement coupled Inertial Propulsion Device has the following specification:

1kg mass per single mechanical drive unit comprising: 1 DC motor-generator + 1 flywheels + 1 Rotor and mounting-frame:

Thrust per single drive unit=30 gram Force, 0.294 Newton-Force. Reference:
www.mindbites.com/series/1278 lesson 8

Energy consumption= 100 watt per unit, Energy recovery through scavenging 25 watt, 75watt Net Energy consumption per 0.294 Newton-Force Thrust.

Energy per Force time= **260 watt per Newton-Force**, this is super efficient propulsion!
In contrast: The Saturn Moon Rocket First Stage (1) had an energy consumption of **4.3 Kilo-watt per Newton-force!!**

Two drive units coupled in tandem for zero rest (net) torque=2 Kg mass.

Total continuous drive force=0.58 Newton force per two tandem drive units.

One Radioisotope Thermionuclear Thermocouple Array Electric Power Generator, RTG having 150 Watt capacity: = 2 Kg mass.

This Power generator has a 80 year lifetime supply of energy and accordingly uses a very minuscule amount of fuel mass per watt-hour making the Oberth Principle unmeasurable per watt-hour.

Controls + Radio + Antennas =1Kg

Total mass of the experiment space probe Vehicle=5 kg mass.

The Proposed Experiment:

The Space Vehicle Probe is launched from the space station at orbital speed boosted by an booster rocket and the gravitational pull of the moon and the outer planets to enter a moon-interplanetary skip-passage course.

The Probe is allowed to gain speed with the thrust of 0.58 Newton force.

Here, within a moving and accelerated inertial platform, Newton's relation of Force to Inertial mass motion acceleration applies having no bounds in vehicular velocity as stated by Newton: A steady force will motivate an inertial mass without bounds! The Inertial Propulsion Drive is a continuously cyclic directional impulse sequence having a new vehicular kinetic energy state , a new inertial reference frame state magnitude, for every new cycle. Accordingly, the vehicular velocity is accumulative without bounds! This vehicular energy flow is relating to the quantum theory!

Contrary, the launch of a photon onto the speed of light "c" from a change in energy state of the Electron mass within the physical bounds-dimensions of the atom-mass does not apply here! This launch principle universally applies to solid state lasers and Neon-gas-discharge-Tubes having an electrical current in form of moving electrons etc.. etc.: Accordingly, the changed energy state of the electron within the atom

bounds launches the photon in one shot-put action!

The Newtonian speed gain per hour of Space probe operation is:

$$dv = F \cdot dt / m = 0.58, N \cdot 3600, s / 5, Kg =$$

Speed gain per hour = $dV/d1h = 418 \text{ m/s}$

The Inertial mass Kinetic Energy Gain = 120 watt-hour

The energy consumed is = 260 watt-hour

The present technology loses 140 watt-hour due to mechanical friction and magnetic motor-rotor drag / eddy currents which is within reach of technological remedies by applying iron-less rotors and magnetic bearings. Accordingly, a 90% efficient drive is within easy reach!

The speed gain per day = $418, \text{ m/s} \cdot 24, \text{ h} = 10022 \text{ m/s}$

The speed gain per year = 3,648,153.6, yes, over **THREE Million** meters per Second!!

After 1 year of operation and at a Speed of well over 3 million meter per second, > 1% of the speed of light, the Oberth Principle effect should be noticeable and verifiable!

The Time to reach a greater than speed of light “C = 300,000,000 m/s” per Newton is:

$$dt = m_{\text{probe}} \cdot dv / F$$

$$t_{\text{years}} = m_{\text{probe}} \cdot 300,000,000 / (0.58 \cdot 86400 \cdot 364) = 82 \text{ years}$$

Time duration 82 years is within the life duration of the power supply!

In Contrast:

Total potential Energy of the Nuclear-Power-supply without the “Oberth principle”= 280320 kwatt-hours

Total top speed **without** the Oberth principle and **without** Planet gravitational assist based on the Potential Power-supply Energy converted into Kinetic Energy (shot-put drive) the vehicle is only achieving =635170 m/s

Electrical energy for utility (radio, control, computer, sensors) purpose is available as a propulsion byproduct.

1 hour=3600 seconds

1 day 24hours

1 day = 86400 seconds

1 year 86400*364=31 million seconds

Without considering the Earth orbital speed around the Sun, the space station orbital speed, booster rocket impulse, moon gravitational pull and outer planetary pull, the probe would exceed the speed of light “C” in 82 years and many billion Km distance out in space if the “Oberth Principle” is correct. Then the probe will disappear from sight, if turned around, the probe will reappear!

However, if we factor in the all available positive pull factors within a “Voyager type interplanetary travel path” and a slight improvement in Inertial Drive performance we would reach the speed of light already in less than 10 years.

Earth orbit speed=29770m/s + space station speed=7710m/s

Moon sling shot skip gain=1000m/s+Mars sling shot skip 2000m/s+ Jupiter sling shot skip 20000m/s+Saturn sling shot skip 20000=total 85000 meter per second. After one year of flight the probe will attain approximate 4 Million m/s=2% of light speed.

This is measurable and verifiable from earth by measuring the continuous dilation of the space probe radio signal due to the Doppler Effect until the radio contact breaks off due to the relativity effect. Other measurements can be proposed to be incorporated in this experiment.

Is it possible that the lack of energy depletion of the Pioneer and Voyager probes was misinterpreted as attributed to Thermocouple efficiency?!

The Experiment will answer the following Questions:

1) Is Newton's $F=m*a$, or Is Galileo, Huygens, Leibniz, Carolis, Kelvin and Einstein's $F=m*(V_b^2-V_a^2)/(2*s)$ the correct principle for an Inertial Propulsion voyage?

In other words: Is the Inertial Propulsion Space voyage an impulse- momentum or an energy constraint?

Accordingly: Is Inertial Propulsion driven Space voyage applying to the Time domain analysis or the Displacement domain analysis?)

This question has never been proven in view of the Inertial Propulsion Reality. The Author presents in his presented Publications prove that Newton was actually correct, there is no speed limit! Because the space voyage by means of the Inertial Propulsion is a time domain physics. While the internal operation of the inertial propulsion drive unit is relating to the displacement domain physics!

2) Is the Inertial Propulsion self contained impulse magnitude, measured with the pendulum test, applying uniformly at all speeds of the voyage according to Newton's principles? Or is there a reference frame shift applying, reducing the effectiveness of the generated impulse at elevated speeds??

3)What represents the Physical Parametric reality of the "Oberth Principle" within the moving accelerated platform of the space vehicle at measurable relativistic speeds?

4)Does the Nuclear-fuel temperature and the thermal-couple power supply voltage increase with increasing relativistic vehicular velocity?

5)Does the RPM of the Inertial Propulsion Unit increase proportionally with the relativistic vehicular speed due to increasing power supply output? And, does the performance of the drive unit increase proportionally with the Vehicular speed?

6)Is the increasing Nuclear power output a runaway situation?

7)If there is a nuclear-fuel thermal runaway condition? Is the thermal runaway condition manageable with present technology?

8)How does the Nuclear-Fuel temperature relate to absolute zero Kelvin in terms

of vehicular speed?

9) How does the nuclear-Fuel temperature relate to the onboard thermal kinetic energy of an onboard compressed gas containers?

10) Is it possible to extrapolate the real absolute speed of a vehicle at relativistic speed from temperature data of nuclear-fuel and kinetic energy of gases? In other words: Is the relativistic speed an absolute speed measurable by the Nuclear-Fuel temperature?

11) If the Inertial Propulsion Vehicle does not achieve “C” what are the parametric conditions at the stall speed? Where is the continuing drive energy disappearing to? What is the energy sink?

12) Is the Einstein’s space-time fabric of space preventing the probe to reach a higher speed than “c”? This can be verified by the time dilation during the approach onto the speed of light.

13) If the Nuclear fuel value does appreciate (inflate) at relativistic speeds, but additionally only returning the kinetic energy of the fuel, why is the fuel mass itself not relativistic?

these questions are unanswerable without experimental evidence data!

I, m inviting Independently Forward Thinking Universities having intellectual freedom to come forward and join in a team to start work on accomplishing this exiting experiment at comparable low cost.

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P.S. Einstein said: God does not play dice. This saying can be improved: He indeed invented the dice principle!!!

Hermann Oberth said: Our Education system illuminates the past sciences in a bright blinding light, but the **Future** is barely illuminated by their teachings.

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