

Universal Gravitational Thruster (UGT)

Using **H₂O (Distilled Water)** (Or others Polar molecules).

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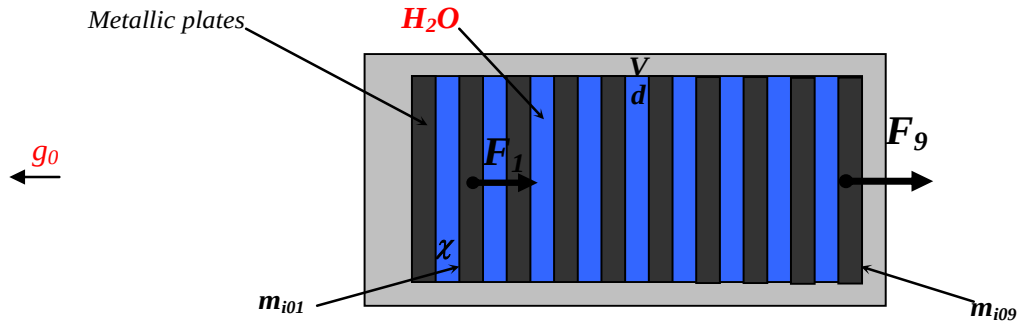
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Recently, I have shown how to build several types of Universal Gravitational Thruster (UGT); using photon gas; electron gas; Duracap 86103; Metglas 2714A, etc. Here I shown a new type of UGT using H₂O or others polar molecules. This became very easy the building of the UGTs.

Key words: Gravitation, Gravity Control, Universal Gravitational Thruster

1. THEORY

Consider a UGT with 9 plates (0, 1, ...9). Between them there is **Distilled Water** ($\mu_r = 1$; $\sigma = 2 \times 10^{-4} S/m$; $\rho = 1000 kg.m^{-3}$; dielectric strength $> 20 KV/mm$).



When a voltage V , with frequency f , is applied on the metallic plates, the value of χ , between the metallic plates, is given by [1]:

$$\chi = m_g / m_{i0} = \left\{ 1 - 2 \left[\sqrt{1 + \left(\mu / 4c^2 \right) \left(\sigma / 4\pi f \right)^3 \frac{E^4}{\rho^2}} - 1 \right] \right\} \quad (1)$$

Note that $E = E_m \sin \omega t$. The average value for E^2 is equal to $\frac{1}{2} E_m^2$ because E varies sinusoidally (E_m is the maximum value for E). On the other hand, $E_{rms} = E_m / \sqrt{2}$. Consequently we can change E^4 for E_{rms}^4 , and the equation above can be rewritten as follows

$$\chi = m_g / m_{i0} = \left\{ 1 - 2 \left[\sqrt{1 + 1.758 \times 10^{-27} \left(\mu_r \sigma^3 / \rho^2 f^3 \right) E_{rms}^4} - 1 \right] \right\} \quad (2)$$

Substitution of $\mu_r = 1$; $\sigma = 2 \times 10^{-4} S/m$; $\rho = 1000 kg.m^{-3}$ into equation above gives

$$\chi = m_g / m_{i0} = \left\{ 1 - 2 \left[\sqrt{1 + 1.40 \times 10^{-44} \left(E_{rms}^4 / f^3 \right)} - 1 \right] \right\} \quad (3)$$

The Electric Field of the dipole of the **H₂O Molecule**, is given by [2]:

$$\vec{E} = [3(\vec{p} \cdot \hat{r})\hat{r} - \vec{p}] / 4\pi\epsilon_0 r^3 = 2\vec{p} / 4\pi\epsilon_0 r^3$$

where $p = 6.17 \times 10^{-30} C.m$ and $r = 9.6 \times 10^{-11} m$. Thus, we get $E = 1.26 \times 10^{11} V/m$. The exact calculation of the electric field inside a water molecule is very complex; it depends on of several factors. Here, we will assume the value $\bar{E} \cong E$ for the entire molecule.

Now consider that an external oscillating electric field, $E_f \cong 1V/m$, with frequency f is applied on the water molecule. The vectorial sum of $\bar{E}$ with E_f produces an oscillating field, $\vec{E}_{rms}$, with intensity $E_{rms} \cong \bar{E} \cong 1.26 \times 10^{11} V/m$. By substituting this value into Eq. (3), we get

$$\chi = m_g / m_{i0} \cong \left\{ 1 - 2 \left[\sqrt{1 + 3.52 / f^3} - 1 \right] \right\} \quad (4)$$

On the other hand, the forces acting on the metallic plates are, respectively, expressed by

$$\vec{F}_1 = m_{i01}\vec{g}_1 = m_{i01}(\chi\vec{g}_0) = \chi m_{i01}\vec{g}_0;$$

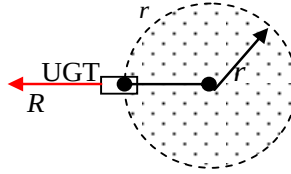
$$\vec{F}_9 = m_{i09}\vec{g}_9 = m_{i09}(\chi\vec{g}_9) = m_{i09}[\chi(\chi^8\vec{g}_0)] = \chi^9 m_{i09}\vec{g}_0;$$

Note that, due to $\chi < 0$, and $\chi^9 < 0$ then $\vec{F}_9$ has the same direction of $\vec{F}_1$. The resultant $\vec{R}$ is

$$\vec{R} = \vec{F}_1 + \vec{F}_2 + \dots + \vec{F}_9 \cong \vec{F}_9 = \chi^9 m_{i09}\vec{g}_0$$

If the oscillating electric field through the H₂O molecules has **extremely-low frequency**, for example, if **$f = 0.2\text{Hz}$** , then Eq. (4), gives **$\chi \cong -39$** . Thus, we get $R \cong F_9 = \chi^9 m_{i09}g_0 = (-39)^9 m_{i09}g_0$. If $m_{i09} = 10\text{kg}$ the result is **$R \cong 2 \times 10^{15} g_0$** .

If the UGT is inside Earth's atmosphere, at a distance **$r = 1\text{m}$** from the center of an "air sphere",

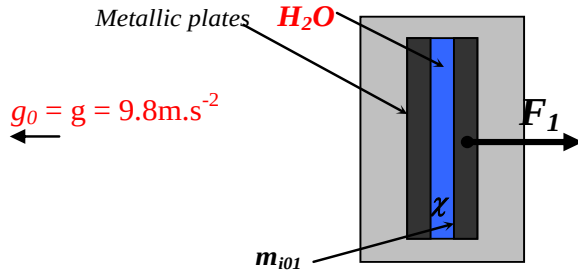


Then $g_0 = Gm/r^2 = G(\frac{4}{3}\pi\rho_{air}r)/r^2 = \frac{4}{3}\pi G\rho_{air}r \cong 2.8 \times 10^{-10} \text{m.s}^{-2}$. In this case, we get

$$\mathbf{R \cong 560kN}.$$

If the UGT is at the **Intergalactic Medium** ($\rho_{IGM} \approx 10^{-26} \text{kg.m}^{-3}$), then $g_0 = \frac{4}{3}\pi G\rho_{IGM}r \cong 2.6 \times 10^{-36} \text{m.s}^{-2}$. In this case, it is necessary that the UGT have at least **25 activated plates ($n=25$)**, (**$\chi^n = (-39)^{25} \cong -5.9 \times 10^{39}$**), in order to obtain a significant thrust **$R \cong 150\text{kN}$** . In short, the number of activated plates in an UGT depends on the value of the gravity $g_0 = \frac{4}{3}\pi G\rho r$, where the UGT is.

Let us now consider the case, in which the UGT has just one capacitor, and it is on the Earth surface ($\vec{g}_0 = \vec{g} = 9.8\text{m.s}^{-2}$).



In this case, there is just the force $\vec{F}_1$, which is expressed by

$$\vec{F}_1 = m_{i01}\vec{g}_1 = m_{i01}(\chi\vec{g}) = \chi m_{i01}\vec{g} \quad (5).$$

If **$f = 0.5\text{Hz}$** , then Eq. (4), gives **$\chi \cong -7.8$** . Thus, Eq. (5) gives

$$|F_1| = |\chi| m_{i01} \vec{g} = (7.8)(9.8)m_{i01} = 76.4m_{i01}. \text{ If } m_{i01} = 1\text{kg} \text{ the result is } \mathbf{R = |F_1| \cong 76.4N}$$

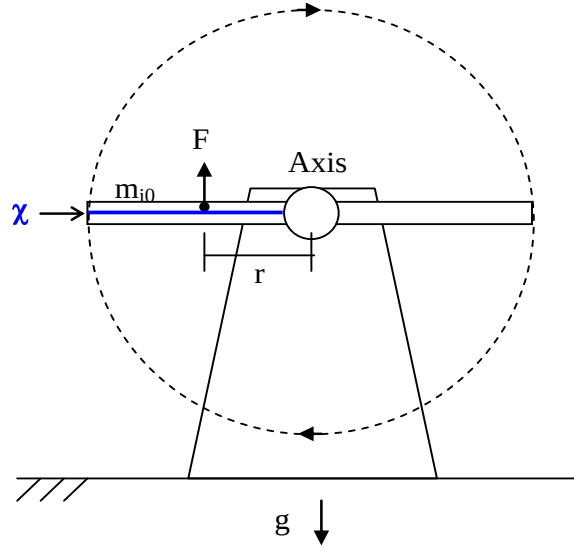
CONCLUSION

An experimental arrangement to check this result is very simple to be building, and practically it can be made in any laboratory that it has a Function Generator, in order to produce extremely-low frequency voltages.

References

- [1] De Aquino, F.,(2020) *Experimental set-up to check the decreasing of the Gravitational Mass in Metallic Discs subjected to an alternating voltage of extremely low frequency*, Eq. (8). <https://hal.science/hal-02448571>
- [2] B, Laud B. (1987). *Electromagnetics*. [S.l.]: New Age International

APPENDIX



$$F = m_{i0}(\chi g) = m_{i0} a$$

$$a = (\chi g) \quad (I)$$

Since $v = wr = 2\pi f_{rotor} r$ and $v = \sqrt{2ax} = \sqrt{2a(2\pi r)}$ we obtain

$$a = \pi f_{rotor}^2 r \quad (II)$$

By comparing Eq. (I) with Eq. (II) we get

$$f_{rotor} = \sqrt{\frac{\chi g}{\pi r}} \quad (III)$$

In order to $f_{rotor} = 60\text{Hz}$, Eq. (III) tells us that, the radius r must be given by

$$r = \frac{\chi g}{\pi f_{rotor}^2} = 8.66 \times 10^{-4} \chi \quad (IV)$$

For $r = 0.1\text{m}$, it is necessary that $\chi = -115.5$. This value can be obtained, making $f = 0.1\text{Hz}$ in Eq.(4), i.e.,

$$\chi = m_g / m_{i0} \cong \left\{ 1 - 2 \left[\sqrt{1 + 3.52 / f^3} - 1 \right] \right\} = -115.5 \quad (4)$$

Since $W = F.d = F(2\pi r)$, then the power P of the generator (Rotor vane with 1 vane), is *

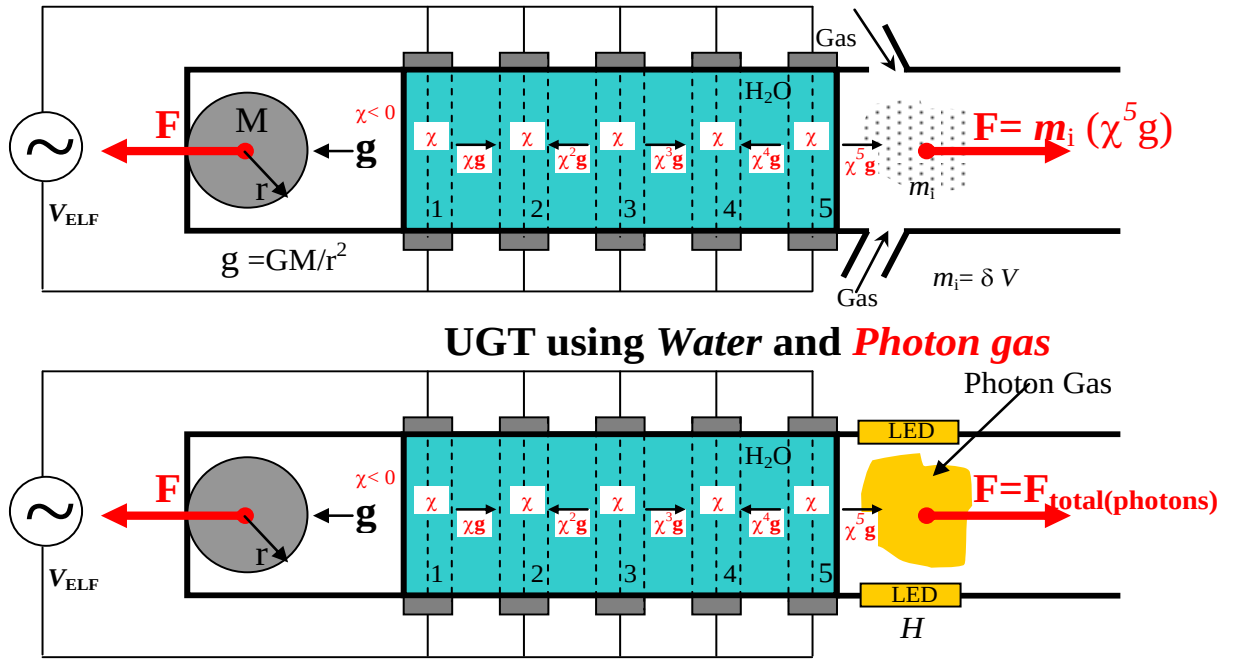
$$P = \frac{W}{T} = F(2\pi r) f_{rotor} = m_{i0}(\chi g)(2\pi r) f_{rotor} \quad (V)$$

For $m_{i0} = 4.5\text{kg}$, we get

$$P \cong 192\text{kW} \cong 257\text{HP}$$

* In the case of Rotor vane with n vanes, P is given by

$$P = \frac{W}{T/n} = (n\chi) m_{i0} g (2\pi r) f_{rotor}$$



We have shown in a previous paper (Mathematical Foundations... pp.38-42) that *real* bodies have a *negative imaginary* gravitational mass associated to it. This conclusion is based on the *phenomenon of gravitational deflection of light around the Sun*, comproved by the experiment carried out by Dyson, F.W., Eddington, A.S., and Davidson, C.,(1920). The **imaginary gravity** produced by an *imaginary* gravitational mass, $m_{g(imaginary)}$, can be expressed by

$g_{imaginary} = -Gm_{g(imaginary)}/r^2 = -G(m_{i0}i)/r^2$. As we have shown in the above mentioned paper, the *imaginary* gravitational mass of a *photon* is $m_{g(photon)imaginary} = \left(\frac{4 hf}{3 c^2} i\right)$. Thus, the gravitational force acting on a *photon* subjected to $g_{imaginary}$, is

given by $F_{(photon)} = m_{g(photon)imaginary}g_{imaginary} = \left(\frac{4 hf}{3 c^2} i\right)g_{imaginary}$. In the case of the UGT,

$g_{imaginary} = -Gm_{g(imaginary)}/r^2 = -G(\chi^n m_{i0}i)/r^2$. The *total imaginary* mass of the *photon gas*, inside the cylindrical LED (volume, $V = SH$), can be expressed by $M_{i(photons)imaginary} = \rho_i V$, where $\rho_i = \left(\frac{D}{3c^3}\right)i = \left(\frac{P/S}{3c^3}\right)i$ (See p.726, Eq.8 of this book).

$M_{i(photons)imaginary} = \rho_i V = \left(\frac{P/S}{3c^3} i\right)(SH) = \left(\frac{PH}{3c^3}\right)i$. Thus, the *resultant force*, acting on the *photon gas* is

$$F_{total(photons)} = NF_{photon} = \left(\frac{M_{i(photons)imaginary}}{m_{i(photon)imaginary}}\right)m_{g(photon)imaginary}g_{imaginary} = M_{i(photons)imaginary}g_{imaginary} = \left(\frac{PH}{3c^3}\right)\chi^n g$$

For $P=1,000W$ (LED Power); $H=1cm$; $f \cong 10^{15} Hz$; $\chi=10$; $n=3(odd)$; $g \cong 10^{-8} m/s^2$ we get

$$F_{total(photons)} \cong 10^5 N = 100kN$$

UGT using Ultra- conductive Magnesium and *Photon gas*

