Time Equivalent of Energy

[1]*Khaled (Moh'd Khalaf) Suleiman Alnobani,*

[1]*Chemical Engineering, Senior Engineer, Jordan Petroleum Refinery Company, Jordan,*
Corresponding author: khaled.alnobani1@gmail.com; Tel.: +962795534539, https://orcid.org/0000-0001-5974-9954

Abstract

This paper derive from previous works a time equivalent of energy. It builds on previous work to represents a new way of understanding of time, space, physics, and everything around us within a single universe. Merely changing time changes energy (energy is a function of time), basically energy is time in the future within a universe. Changes of work (Applying force) or entropy, changes physical properties. Change of time is a reversible process. Within a universe the changes are mechanical and time changes are not mechanical (time change must be separated from changes within). Time is not a continuous axis, it has a oscillating state.

Key words: *Time; Energy; Universe*; *Risk*

Nomenclature

c Speed of light =2.99792458 × 10^8 m/s
E Total energy
F Force
H Hamilton
L Lagrange
m Mass
p Momentum
q General coordinate system
t Time
v velocity
U Potential energy field
ε Energy level
θ Angle
∞ Infinity
ħ Physical constant = 1.0546 × 10^{-34} J·s
= Mathematical operator
Subscripts
i Index

1. Introduction

Within the context of this research there is no chronological order as past, present and future. They are arbitrarily ordered, forward or backward.
In time assessment considerations, there is no tense, so the sequence of events is arbitrary.
What is the probability of a sequence of events that will lead to uncontrollable internal energy?
Failure could be thought of as a result or a start for its premises. There is a totally different way of thinking about failure. Theoretically when a failure occurs, it could be went to the past events and correct it, this is bounded to the fact that reversing chronological order is morally impossible. Future, present, and past, should be separated from chronological order.

The assessment is tied to a scenario.
Equation (1) [1]:

$$dU = c^2\left(\frac{lnq}{cos\theta}+\frac{1}{2}\right)dm - c^2\left(\frac{lnq}{cos\theta}+\frac{1}{2}\right)dm_0 + \frac{c^2(m-m_0)}{cos\theta}d\ ln\ ln\ q - \frac{c^2(m-m_0)(ln\ q\theta}{(cos\theta)^2}d\theta + 2c(m-m_0)\left(\frac{lnq}{cos\theta}+1\right)dc$$

As the interest is in single current universe where the velocity of light is constant, the last term in equation (1) equals zero. Because the concern is within a single event with a certain time path from

$$t = 0$$

The starting mass is considered constant

$$m_0 = constant$$

And the second term equals zero.
Equation (1) becomes:

$$dU = c^2\left(\frac{lnq}{cos\theta}+\frac{1}{2}\right)dm + \frac{c^2(m-m_0)}{cos\theta}d\ ln\ ln\ q - \frac{c^2(m-m_0)(ln\ q\theta}{(cos\theta)^2}d\theta$$

The energy affecting variables are:

$$m, q\ and\ \theta$$

1. The change of mass according to velocity,
2. The position, and
3. The angle between momentum and its resulting distance. Usually within a single verse $\theta = 0$

It is worth to note that time is not an axis for change; hence the mere passing of time without any physical change does not add or subtract energy from the system.

This equation is continuous; it does not represent quantized energy. Quantized energy is represented in the differential form of this equation, which means that not all changes are possible depending on the mode of energy in practice.

Recall that time t [2]:

$$t = \frac{q\ p\ coscos\,\theta}{c^2\ (m_0 - m)} \qquad \text{Eq. (2)}$$

The scenario is an event beginning at time zero this means:

$$c^2\ (m_0 - m) = \infty$$

Which means that the differential energy is infinite.
As c^2 is finite then:

$$(m_0 - m) = \infty$$

As m_0 is finite:

$$-m = \infty$$

Or

$$m = -\infty$$

So $v = -c$

This equation suggests that time proceeds in reverse order and that we are proceeding to the beginning of time. Currently the universe is proceeding to time zero or to its time origin. One can think that every sequence of events imagined is pre-fabricated.

Time is a state and the distance is a state. They are related through the equation [3]:

$$q = e^{tcos\theta}$$

Note that a state variable is needed to reproduce the system. It is apparent that this is not the relation of speed which relate distance with time.

2. Results and Discussion

The presence of the position coordinate variable in a logarithmic function suggests that it could never has a negative or zero value, it could be thought that going back in chronological order or remaining still is not allowed or possible within the systems of physics. It could be assumed conveniently that any changes in position adds to the system energy not subtract from it. The energy is cautiously increased in the view of changing position. What consumes energy is changing direction or changing speed combined in one term as velocity.

Assuming :

- Constant speed of light,
- Motion in a single verse $\boldsymbol{\theta = 0}$ and,
- Constant starting mass $\boldsymbol{m_0}$.

Then $cos\ \boldsymbol{cos\ \theta = 1}$,

$$dU = c^2\left(\frac{lnq}{1}+\frac{1}{2}\right)dm - c^2\left(\frac{lnq}{1}+\frac{1}{2}\right)dm_0 + \frac{c^2(m-m_0)}{1}d\ ln\ ln\ q - \frac{c^2(m-m_0)(ln\ q\theta}{(1)^2}d\theta + 2c(m-m_0)\left(\frac{lnq}{1}+1\right)dc$$

And,

$$dU = c^2\left(\frac{lnq}{1}+\frac{1}{2}\right)dm + \frac{c^2(m-m_0)}{1}d\ ln\ ln\ q$$

$$dU = c^2dm\left[ln\,(q) + \frac{1}{2} + d\ ln\ ln\,(q)\right]$$

$$dU = c^2dmln\,(q)\left[1+\frac{1}{2ln\,(q)} + dln(q)\right]$$

$$= c^2dmln\,(q)\left[1+\frac{1}{2ln\,(q)} + ln\,(q)\right]$$

$$= c^2dmln\,(q)\left[\frac{1}{ln\,(q)} + \frac{1}{2} + 1\right]$$

$$= c^2dmln\,(q)\left[\frac{1}{ln\,(q)} + \frac{3}{2}\right]$$

dU= $c^2dm\left[1+\frac{3}{2}ln\,(q)\right]$

U= $c^2dm + \frac{3}{2}c^2dmln\,(q)$

where $q = \frac{2\hbar}{mv} = e^{tcos\theta}$ as shown in figure 1.

then ln $(\frac{2\hbar}{mv})$=ln($e^{tcos\theta}$) $= tcos\theta$

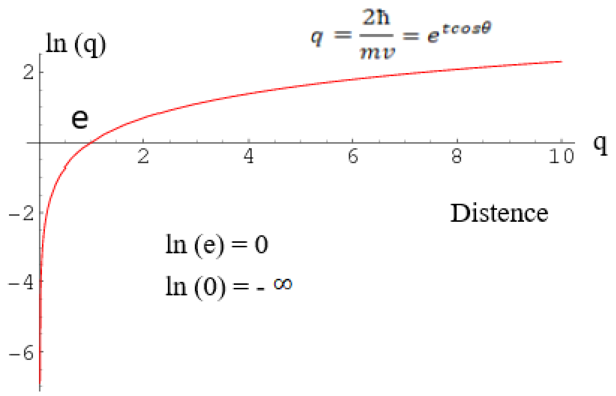

Figure 1 (ln q) .vs. distance.

In physics, mass–energy equivalence is the relationship between mass and energy in a system's rest frame, where the two values differ only by a constant and the units of measurement. The principle is described by the physicist Albert Einstein's famous formula. $\boldsymbol{E = mc^2}$.

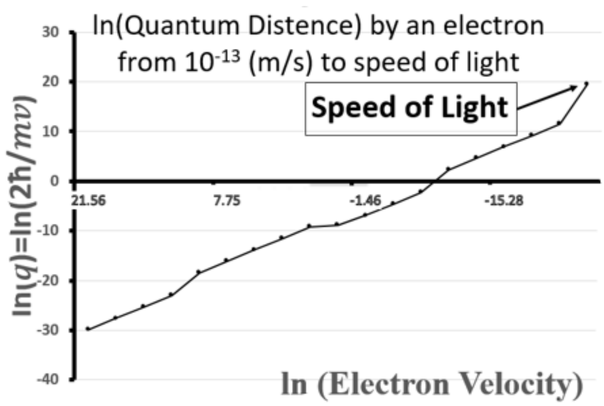

Figure 2 quantum distance.

Figure 2 quantum distance.

$$\boldsymbol{\hat{K} = \frac{c^2}{2}(m_0 - m) = \frac{\hbar^2}{2m}\left(\frac{\partial}{\partial q_i}\right)^2}$$

U= $2K + \frac{3}{2}c^2 dm ln\,(q)$

U$-K = K + \frac{3}{2}c^2 dm ln\,(q)$

L = U$-K = \frac{c^2}{2}(m_0 - m) + \frac{3}{2}c^2 dm ln\,(q)$

Or

H = U+$K = 3K + \frac{3}{2}c^2 dm ln\,(q)$

H = U+$K = 3K + \frac{3}{2}c^2 dm(t \cos\cos(\theta))$

Where cos (θ)=1

H = U+$K = 3K + t\frac{3}{2}c^2 dm = 3\frac{c^2}{2}(m_0 - m) + t\frac{3}{2}c^2 dm = \frac{3}{2}dm\, c^2(1+t)$

For a unit mass *dm=1:* and Time State [2]

H = $\frac{3}{2}c^2(1+t)$

$H = \frac{3}{2}c^2\left[1\,\pi + 1\,\frac{\pi}{2} + 1\,\frac{3\pi}{2} + 1\right]$

3. Conclusion

Neglecting the stretching parameter in the *H, t* equation:

$$\boldsymbol{H = 1 + t}$$

And it is concluded that The total energy is time shifted one unit forward i.e. future time. The risk of time is found in the future.

References

1. Alnobani, K. 2019. "Multiverse Fundamental Equation." Journal of Energy and Power Engineering 13 (2019): 205-208.
2. Alnobani, K. 2017. "Multiverse and the Time State." Journal of Energy and Power Engineering 11 (3): 160-3.
3. Alnobani, K. S. 2018. "Multiverse Theory." Journal of Energy and Power Engineering 12: 186-191.