

Speed of Universe's expansion

If I consider the interference of the relations of mass and energy, from the assumption that there are actions and reactions represented each by a relationship directly and inversely proportional respectively, then I can structure an equation that represents the momentum subject to the action of a force that suffers inverse interference of its proportions which in turn can be related to the inverse increase of mass and energy according to established laws of conservation of momentum so that under these conditions it establishes an equal relationship according to the formula proposed below, which allows to establish which would be, after an algebraic process, the relationships between the speeds of any physical interactive system, as observed or observed from measurements of the speed of expansion of the universe that should not contradict Einstein's predictions, but could somehow be contained in its formula of the relationship of the energy lifted with the mass.

The derivation of the final algebraic result allows us to arrive at a ratio of proportions between the different speeds arising from the action and reaction of the momentum to a third variable that could very well deal with gravity when we consider it an attractive or repulsive time, acting or reacting on momentum, so that at the end a limit speed is obtained that can only be due according to the limitations of the physics of light, the expansion of space that relativizes its expansion equates the momentum energies resulting from the hypothetical observed causality and contra-causality relationship during and even now about the forces acting on matter in the macroscopic universe and who knows about the microscopic universe as well.

If I derivatively transform the velocity into the kinetic energy equation I get a scalar value for the momentum, how much Δt tends to an instant, ceasing to be a vector quantity, equalizing momentum with energy when all potential energy is zero. It can be equated to Einstein's equation for energy, $E = mc^2$, then I can consider any state of the universe that corresponds to this situation when subjected to attractive and repulsive gravity which would give a state of simultaneous dynamic equilibrium between contraction and repulsion.

$$E = m * c^2$$

$$\frac{m * v}{g} = m * c^2 * g$$

$$m * v = m * c^2 g^2$$

$$g = \sqrt{\frac{v}{c^2}} \Rightarrow g = c^{-1} * \sqrt{v}$$

$$n * c^{-1} * \sqrt{v} = m * v$$

$$m = \frac{\frac{n * c^{-1} \sqrt{v}}{1}}{v}$$

$$vm / c^{-1} \sqrt{v} = m * c * \sqrt{v} = n$$

$$g_1 m_1 = g_2 m_2$$

$$c^{-1} \sqrt{v} * \frac{n * c^{-1} \sqrt{v}}{v} = v^{-1} \sqrt{v} * \frac{n * c^{-1} \sqrt{v}}{v}$$

$$v * (c^{-1} \sqrt{v}) * nc^{-1} \sqrt{v} = v * (v^{-1} \sqrt{v}) * nc^{-1} \sqrt{v}$$

$$vc^{-1} v * (nc^{-1} \sqrt{v}) = v * nc^{-1} \sqrt{v}$$

$$v^2 nc^{-2} v = v * nc^{-1} \sqrt{v}$$

$$v^3 nc^{-2} = v * nc^{-1} \sqrt{v}$$

$$c = \sqrt{\frac{vnc^{-1} \sqrt{v}}{v^3 n}} = v^{-1} c^{\frac{-1}{2}} \sqrt{v} \rightarrow c / c^{\frac{1}{2}} = v^{-1} \sqrt{v}$$

$$c^{3/2} = v^{-1} \sqrt{v} \rightarrow c \sqrt{c} = v^{-1} \sqrt{v}$$

$$c = \frac{v^{-1} \sqrt{v} * \sqrt{c}}{\sqrt{c} * \sqrt{c}} \rightarrow c = \frac{v^{-1} \sqrt{cv}}{c}$$

$$c = \sqrt{v^{-1} \sqrt{cv}}$$

$$c = \sqrt{v^{-1} (cv)^{1/2}} \Rightarrow \frac{\sqrt{(cv)^{1/2}}}{\sqrt{v}} * \frac{\sqrt{v}}{\sqrt{v}}$$

$$\frac{\left(\sqrt{v * \sqrt{\sqrt{cv}}} \right)^2}{v} \frac{v * \sqrt{cv}}{v^2} \Rightarrow v^{-1} * \sqrt{cv} = c^2$$

$$c^{-1} \sqrt{v} = v^{-1} \sqrt{cv}$$

$$v = \frac{c \sqrt{v}}{c^2} \Rightarrow v = \sqrt{v} / c = c = \frac{\sqrt{v}}{v} = v^{\frac{1}{2}} * v^{-1} \Rightarrow$$

$$c = v^{-1/2}$$

$$\frac{dy}{dx} \left(c * v^{\frac{1}{2}} \right) = c * v^{\frac{1}{2'}} + c' * v^{1/2}$$

$$c * \frac{1}{2} - 1 * v^{-\frac{1}{2}} + 1 * v^{1/2}$$

$$\frac{c * -1/2}{v^{1/2}} + v^{1/2}$$

$$\frac{c * -\frac{1}{2} + v^{\frac{1}{2}} * v^{1/2}}{v^{1/2}}$$

$$\frac{-\frac{c}{2} + v}{\sqrt{v}} * \frac{\sqrt{v}}{\sqrt{v}}$$

$$\frac{-\frac{c}{2} + v * \sqrt{v}}{v}$$

$$\frac{-c/2}{v} = \frac{-v * \sqrt{v}}{v}$$

$$v - \frac{c}{2} = -v^2 * \sqrt{v}$$

$$2v - c = -v^2 * \sqrt{v} - 2v$$

$$-c = -v * (v * \sqrt{v} - 2) * (-1)$$

$$v = \frac{c}{v * \sqrt{v} + 2} * \frac{\sqrt{v}}{\sqrt{v}}$$

$$v = \frac{c * \sqrt{v}}{v^2 + 2 * \sqrt{v}}$$

$$\lim_{v \rightarrow c} \frac{c\sqrt{v}}{v^2 + 2\sqrt{v}} = \frac{c\sqrt{c}}{c^2 + 2\sqrt{c}} = > \frac{3.0 * 10^8 * \sqrt{3 * 10^8}}{3.0 * 10^8 + 2\sqrt{3.0 * 10^8}} = \frac{9.0 * 10^{12}}{3.0 * 10^8} = 3.0 * 10^4$$

$$c = v^{-1/2}$$

$$3.0 * 10^8 = \frac{\sqrt{3.0 * 10^4}}{3.0 * 10^4} = 1.0 * 10^{-2}$$

Stablising a proportion:

$$3.0 * 10^8 = 1.0 * 10^{-2}$$

$$X = 3.0 * 10^8$$

$$X = \frac{3.0 * 10^{16}}{1.0 * 10^{-2}} = 3.0 * 10^{18} \text{ meters per second}$$

Aproximately a __ digits Km/MPc (kilometers per Mega parsec)

If I consider the final result obtained and consider that the proportions remain constant according to what the calculation demonstrated, then I can manipulate the time accordingly to obtain a ratio that gives me the result of the calculated value for the Hubble constant so that I do not distort the result. Coincidentally, the value of 0.24 seconds found by another calculation published in "Quantizing gravity from frequencies, figshare", is adequate to establish a new value for x that would be a consequence of dividing 1 by 0.24 and then $3.0 * 10^{18}$ by the

result of 1 by 0.24 that would give 72 km / s / Mpc +/- 4.1666, or the lowest value 67.83 Km / s / Mpc.

The value of 0.24 seconds represents the excess time in seconds of the expected expansion for expansion according to the ratio of forces in the matrix of the publication "Quantizing gravity from frequencies, figshare".

$$C=v^{(-1/2)}$$

$$299792458=v^{-1/2}$$

$$V= 1/89851536077041 = 1,1129470275*10^{-17}$$

$$299792458/v=(2,6936812857*10^{25}/1*10^{-2})*3=8.0810*10^{27}$$

$$8.0810...*10^{27}/72000=1.1222222...*10^{23}= 1.122...*10^{23}/(1/0.24)=2.69*10^{22} \text{ wich is the value for } v \text{ if it is } 72 \text{ km/s /mpc}$$

One might after the results confirm actual experimental and actual values for the speed of the expansion of the universe according to the given relation stablished in the begining of the paper, exercise mentally or just fantasize mathematically still keeping a degree of coherence given by the mathematical rules as follows in the lines below:

$$c = v^{-1/2} \rightarrow 3.0 * 10^8 ms^{-1} = 1 * 10^{-2} ms^{-1}$$

If I consider a given t (time) = $10^{-10} s$ the speeds become comparably almost equal as $\frac{1.0*10^{-2}}{3*10^{-10}} = 3 * 10^8 \Leftrightarrow 3.0 * 10^8$, as if given a time cosnidered to be very small leading to a huge accelaration within that time the speeds would be equal for that given instant calculated. And if we pass the given amount of time to be $1.0 * 10^{-10} ms^{-1} * 3.0 * 10^8 =$ and then divide $\frac{3*10^{-2}m^2s^{-2}}{1*10^{-2}ms^{-2}} =$ amount of space 3 as if space = space when $s^{-2} = s^{-1}$

But if we consider a value of the compared speed to be $1*10^{-8} ms^{-1}$ then $\frac{3.0*10^8ms^{-1}}{1*10^{-8}ms^{-1}} = c^2$.

$$AS E=mc^2 \rightarrow Kgms^{-2} \Rightarrow \frac{Kgms^{-2}}{Kg} = ms^{-2} \Rightarrow \frac{Kg}{Kg} = \frac{ms^{-2}}{ms^{-2}} = 1 = 1 \Rightarrow \frac{E}{m} = ms^{-2}$$

$$=\frac{c^2}{c^2} \text{ and } E = m \text{ but if } E=m^{-1}*c^2 \Rightarrow E=m^{-1} \Rightarrow \frac{1}{m^\infty} = 0 \rightarrow E = 0 = c^2$$

If I consider that the average value between 2 consecutive prime numbers is equal to the average value of the non-prime numbers between them, and recognizing that the average of the sum of the extremes is equal to the average of the sum of the terms between these two

extremes as in: $13, 14, 15, 16, 17 = \frac{13+17}{2} = \frac{14+15+16}{3} \Rightarrow 13 <> 17 =$

$14, 15, 16$ would be the same as if I wrote $\frac{\frac{P_1+P_2}{2} + P_1 - P_2 - 1}{P_1 - P_2 - 1} = \frac{P_1+P_2}{2}$ where $P_1 = \text{first prime}$

$P_2 = \text{second Prime; making } P_1 = x \text{ and } P_2 = y \Rightarrow \frac{\frac{x+y}{2} + x - y - 1}{x - y - 1} = \frac{x+y}{2} \Rightarrow$

Now lets search for a pattern to identify primes and non primes

Examples:

1) Between 23 and 29 (both primes)

$$\frac{\frac{23+29}{2} + 23 - 29 - 1}{23 - 29 - 1} = \frac{23+29}{2} \Rightarrow \frac{26 + (-7)}{-7} = 26 \Rightarrow \frac{19}{-7}$$

$= 26$ observing the numbers it is clear that by subtracting the denominator from the numerator

the left it is equal the value of the right: $19 - (-7) =$

26 but adding gives $19 - 7 = 12 = 26 \Rightarrow 12 = 26$ which is equal $6 =$

13 a relation that establishes an equality between a prime and non prime

For the relation above to be true then $x-y=x/y$

Then $0=c^2 \rightarrow \frac{0}{y} = 0 - y \Rightarrow \frac{0}{c^2} = 0 - c^2 \Rightarrow 0 = -c^2 \therefore \sqrt{-c^2} = ic$ so $-c^2 = \overleftarrow{c^2} = ic \Rightarrow$

$$0E = 0m \rightarrow 0v = -v \therefore \frac{\Delta s}{\Delta t} = \Delta s - \Delta t \rightarrow \frac{\Delta s = 0}{\Delta t} = 0 - \Delta t \rightarrow 0 = -\Delta t * \Delta t = -t^2$$

For $t=-1 \rightarrow \frac{-1}{\Delta t} = -1 - \Delta t \rightarrow \Delta t * (1 - \Delta t) = -1 \rightarrow \Delta t - \Delta t^2 = -1 \rightarrow i - i^2 = -1 \therefore i - (-1) =$

$-1 \rightarrow i = -2 \therefore t = i \rightarrow i = -2 \Rightarrow -t^2 = i^2 \Rightarrow t = -\sqrt{-1} \Rightarrow$

$-i$ or a opposite imaginary vector of time $\tilde{t} \dots$

For a simultaneous contracting universe needed to lead to rest mass when the momentum is zero, to exist must consider speeds in opposite directions just as a clock ticking backwards.