

*Everyone can have one's own opinion, but numbers are numbers and there's no question of them!
The closest thing to intelligence is simplicity.*

PHYSICS OF SEVERAL UNIVERSITIES VERSUS RUBINO'S PHYSICS

(in 14 points)

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Abstract: Here is a comparison, in 14 points, between the modern prevailing physics of many universities and mine. The reader has the task to judge the comparison and decide.

The nowadays' prevailing physics is proceeding with problems and inconsistencies with the density of the Universe, with its expansion, with the acceleration and with the visible borders of the Universe itself, with strange interpretations of the CMBR, with the justification of the mysterious dark matter, with the fast spinning of galaxies, with the absence of a convincing unification between two very similar forces, the gravitational and the electromagnetic ones, then with the mysterious and unjustifiable fourth dimension of the relativity, then with the unexplained existence and constancy of the c speed limit, with the apparently complete extraneousness of the microscopic and macroscopic worlds, then with the impossibility to provide a convincing explanation for the dimension of a galaxy, then with lost energies, with the apparent missing of the antimatter in the Universe, with the inability to justify the appearing of the Universe etc.

- 1- On the density of the Universe, on its dimensions, on its mass, on its age and on the presumptuousness to see its borders.**
- 2- The expansion of the Universe they support is unjustifiable and incompatible with their own observations themselves!**
- 3- On the Cosmic Microwave Background Radiation (CMBR) at 2,73 kelvin.**
- 4- On the galaxy rotation curves (too fast) and on the cosmic acceleration.**
- 5- Unification between Gravity and Electromagnetism, in both cases.**
- 6- The fourth dimension, unjustifiable, unascertainable and not plausible.**
- 7- The speed limit c is unjustified in the official physics of many universities.**
- 8- No links between microscopic and macroscopic worlds, in the physics of many universities.**
- 9- No link between the Universe and the Heisenberg Indetermination Principle, in the physics of many universities.**
- 10- No surprising link between the Universe and the number of particles in it, in the physics of many universities.**
- 11- Justification for masses and radii of galaxies, in my physics.**
- 12- On the total disagreement, between the theory and the measurements, on the lost energies.**
- 13- On the absence of antimatter in our Universe.**
- 14- Cosmic sphere, or dot, of the prevailing physics versus the legitimation to appear, for the +/- pairs, in my physics.**

1- On the density of the Universe, on its dimensions, on its mass, on its age and on the presumptuousness to see its borders.

Physics in many universities:

Nowadays' cosmology figures out the radius of the Universe as:

$$R_{Univ} \approx 4000Mpc \approx 13,5 \cdot 10^9 light_years \quad (1.1)$$

According to the Hubble's Law, as a matter of fact, we have an almost constant speed to distance ratio:

$H = v/d$, H is the Hubble's Constant:

$$H \cong 75km/(s \cdot Mpc) \cong 2,338 \cdot 10^{-18} [(m/s)/m] \quad (1.2)$$

As the farthest objects ever observed are going farther with a speed which is close to that of light, we have that:

$$H \approx c/R_{Univ} , \text{ from which: } R_{Univ} \approx c/H \approx 4000Mpc \approx 13,5 \cdot 10^9 light_years \quad (1.3)$$

which is the (1.1), indeed.

About the age of the Universe, with an expansion with the speed of light, we would find an amount of years equal to that in the (1.1), that is:

$$T_{Univ} \approx 13,5 \cdot 10^9 years \quad (1.4)$$

For what the mass is concerned, one can easily calculate the speed of a "gravitating" mass m at the edge of the visible Universe, by the following equality between centrifugal and gravitational forces:

$$m \cdot a = m \cdot \frac{c^2}{R_{Univ}} = G \cdot m \cdot M_{Univ} / R_{Univ}^2 , \quad (1.5)$$

from which, also considering (1.3), we have:

$$M_{Univ} = c^3 / (G \cdot H) \cong 1,67 \cdot 10^{53} kg \quad (1.6)$$

The corresponding value of density ρ , for the Universe which comes out, is:

$$r = M_{Univ} / (\frac{4}{3} p R_{Univ}^3) = (c^3 / GH) / [\frac{4}{3} p (\frac{c}{H})^3] = H^2 / (\frac{4}{3} p G) \cong 2 \cdot 10^{-26} kg / m^3 \text{ (too high!)} \quad (1.7)$$

On the contrary, the astrophysicists do not measure such a value; by observing the Universe and carrying out measurements on it, they come to the following result:

$$r = 2.32273 \cdot 10^{-30} kg / m^3 , \text{ which is very smaller than that in the (1.7), anyhow.}$$

Rubino's physics:

If, on the contrary, we say the Universe is 100 times bigger and heavier:

$$R_{Univ-New} \cong 100R_{Univ} \cong 1,17908 \cdot 10^{28} m \quad (1.8)$$

$$M_{Univ-New} \cong 100M_{Univ} \cong 1,59486 \cdot 10^{55} kg \quad (1.9)$$

we get:

$$r = M_{Univ-New} / (\frac{4}{3} p \cdot R_{Univ-New}^3) = 2.32273 \cdot 10^{-30} kg / m^3 \quad ! \quad (1.10)$$

which is the right measured density!

Through those new bigger values, and by getting rid of the "New", we also realize that:

$$c^2 = \frac{GM_{Univ}}{R_{Univ}} \quad ! \quad (1.11)$$

About the new T_{Univ} of the Universe, we know from physics that: $v = \omega R$ and $w = 2p/T$, and, for the whole Universe: $c = \omega R_{Univ}$ and $w = 2p/T_{Univ}$, from which:

$$T_{Univ} = \frac{2pR_{Univ}}{c} = 2,47118 \cdot 10^{20} s \quad (7.840 \text{ billion years}) \quad (1.12)$$

which is, for sure, at least 100 times longer than that in the (1.4), and even if we extended it to a cycle time, so that it became:

$$T_{Univ-wrong} = \frac{2pR_{Univ-wrong}}{c} = 2,67 \cdot 10^{18} s \text{ (that is, the time in the (1.4) extended to a complete cycle)} \quad (1.13)$$

So, we have obtained a lower density, in agreement with what observed by astrophysicists and we have also got rid of the presumptuousness to be able to observe the farthest objects at the borders of the Universe.

Moreover, there isn't any need anymore to consider lots of dark and invisible matter to make their wrong theoretical density match that effectively measured.

2- The expansion of the Universe they support is unjustifiable and incompatible with their own observations themselves!

Physics in many universities:

It's difficult to have consistency for an expanding Universe which also shows global attractive/collapsing properties, in form of gravity.

Moreover, their recent measurements on far Ia supernovae, used as standard candles, proved the Universe to be accelerating indeed, and this is against the theory of the supposed post Big Bang expansion, as, after that an explosion has ceased its effect, chips spread out in expansion, ok, but they must obviously do that without accelerating.

Physics of many universities must deal with (and is already dealing with) all this!

Rubino's physics:

Well, we have to admit that if matter shows mutual attraction as gravitation, then we are in a harmonic and oscillating Universe in contraction towards a common point, that is the center of mass of all the Universe. As a matter of fact, the acceleration towards the center of mass of the Universe and the gravitational attractive properties are two faces of the same medal. Moreover, all the matter around us shows it wants to collapse: if I have a pen in my hand and I leave it, it drops, so showing me it wants to collapse; then, the Moon wants to collapse into the Earth, the Earth wants to collapse into the Sun, the Sun into the centre of the Milky Way, the Milky Way into the centre of the cluster and so on; therefore, all the Universe is collapsing. Isn't it?

So why do we see far matter around us getting farther and not closer? Easy. If three parachutists jump in succession from a certain altitude, all of them are falling towards the center of the Earth, where they would ideally meet, but if parachutist n. 2, that is the middle one, looks ahead, he sees n. 1 getting farther, as he jumped earlier and so he has a higher speed, and if he looks back at n. 3, he still sees him getting farther as n. 2, who is making observations, jumped before n. 3 and so he has a higher speed. Therefore, although all the three are accelerating towards a common point, they see each other getting farther. Hubble was somehow like parachutist n. 2 who is making observations here, but he didn't realize of the background acceleration g (a_{Univ}).

At last, I remind you again of the fact that recent measurements on Ia type supernovae in far galaxies, used as standard candles, have shown an accelerating Universe; this fact is against the theory of our supposed current post Big Bang expansion, as, after that an explosion has ceased its effect, chips spread out in expansion, ok, but they must obviously do that without accelerating.

3- On the Cosmic Microwave Background Radiation (CMBR) at 2,73 kelvin.

Physics in many universities:

The Universe is permeated with an electromagnetic radiation (CMBR) with a certain frequency and so with a certain wavelength.

According to Wien's Law, for such a wavelength there is a value of temperature for the body which emitted it:

$$I_{max} = \frac{C}{T} = \frac{0,2897 \cdot 10^{-2}}{T} = 1,06 \cdot 10^{-3} \quad [m] \quad (\text{Wien's Law}) \quad (3.1)$$

($C = 0,2897 \cdot 10^{-2} \quad [K \cdot m]$ it is the Wien's Constant)

$$\text{from which: } T = \frac{C}{I} = \frac{0,2897 \cdot 10^{-2}}{I} \cong 2,73K .$$

If now we use the Stephan-Boltzmann's Law: $e = sT^4$ [W/m^2] ($s = 5,67 \cdot 10^{-8} W/(m^2 K^4)$), it can be also rewritten in the following way:

$$\frac{L_{Univ}}{4pR_{Univ}^2} = sT^4, \text{ where } L_{Univ} = \frac{M_{Univ}c^2}{T_{Univ}} \text{ is the power, in watt, for the Universe shown in many universities.}$$

By inverting this formula, one gets, as a temperature of their Universe:

$$T = \left(\frac{L_{Univ}}{4pR_{Univ}^2 s} \right)^{1/4} = \left(\frac{\frac{M_{Univ}c^2}{T_{Univ}}}{4pR_{Univ}^2 s} \right)^{1/4} \neq 2,73K \text{ (after having used values from the (1.1), (1.6) and (1.13))}$$

which is a totally different value, with respect to 2,73K and much bigger.

So, what did they decided to do? They stated that such a radiation is not that of the Universe now, (although they are measuring it now), but it's that emitted when the young Universe was approximately 350.000 years old and the radiation detached from the matter. At that time, on the contrary, the possible temperature was around 3000K (and, for sure, <50.000K), and not 2,73K. So, what did they counterinvented? That from that time to now, along billions years', such a hot radiation (without being reabsorbed by the matter, in order to be detected by us now) has degraded by travelling, by Doppler's effect, by red shift, so becoming a 2,73K now!!! Never putting limits on human imagination!

Rubino's physics:

On the contrari, by using moe consistent data from my Universe, that is the (1.8), (1.9) and (1.12), we have:

$$L_{Univ} = \frac{M_{Univ}c^2}{T_{Univ}} = 5,80 \cdot 10^{51} W, \text{ from which, according to Stephan-Boltzmann:}$$

$$T = \left(\frac{L_{Univ}}{4pR_{Univ}^2 s} \right)^{1/4} \cong 2,73K \text{ !!!!!!!!!!}$$

It's very interesting to notice that if we imagine an electron ("stable" and base particle in our Universe!) irradiating all energy it's made of in time T_{Univ} , we get a power which is exactly 1/2 of Planck's constants, expressed in watt!

In fact:

$$L_e = \frac{m_e c^2}{T_{Univ}} = \frac{1}{2} h_w = 3,316 \cdot 10^{-34} W \tag{3.2}$$

Moreover, we notice that an electron and the Universe have got the same luminosity-mass ratio:

$$\text{In fact, } L_{Univ} = \frac{M_{Univ}c^2}{T_{Univ}} = 5,80 \cdot 10^{51} W \text{ (by definition) and it's so true that:}$$

$$\frac{L_{Univ}}{M_{Univ}} = \frac{\frac{M_{Univ}c^2}{T_{Univ}}}{M_{Univ}} = \frac{c^2}{T_{Univ}} = \frac{L_e}{m_e} = \frac{\frac{m_e c^2}{T_{Univ}}}{m_e} = \frac{c^2}{T_{Univ}} = \frac{1}{2} \frac{h_w}{m_e} \text{ and, according to Stephan-Boltzmann's law, we can}$$

consider that both an "electron" and the Universe have got the same temperature, the cosmic microwave background one:

$$\frac{L}{4pR^2} = sT^4, \text{ from which: } T = \left(\frac{L}{4pR^2 s} \right)^{1/4} = \left(\frac{L_{Univ}}{4pR_{Univ}^2 s} \right)^{1/4} = \left(\frac{L_e}{4pR_e^2 s} \right)^{1/4} = \left(\frac{\frac{1}{2} h_w}{4pR_e^2 s} \right)^{1/4} \cong 2,73K ! \tag{3.3}$$

And all this is no more true if we use data from the prevailing cosmology!

4- On the galaxy rotation curves (too fast) and on the cosmic acceleration.

Preamble:

Let's remind ourselves of the classic radius of an electron ("stable" and base particle in our Universe!), which is defined by the equality of its energy $E=m_e c^2$ and its electrostatic one, imagined on its surface (in a classic sense):

$$m_e \cdot c^2 = \frac{1}{4\pi\epsilon_0} \frac{e^2}{r_e}, \text{ so:} \quad (4.1)$$

$$r_e = \frac{1}{4\pi\epsilon_0} \frac{e^2}{m_e \cdot c^2} \cong 2,8179 \cdot 10^{-15} \text{ m.}$$

Now, still in a classic sense, if we imagine, for instance, to figure out the gravitational acceleration on an electron, as if it were a small planet, we must easily conclude that:

$$m_x \cdot g_e = G \frac{m_x \cdot m_e}{r_e^2} (= a_{Univ}) \text{ from which:}$$

$$g_e = G \frac{m_e}{r_e^2} = 8p^2 e_0^2 \frac{Gm_e^3 c^4}{e^4} (= a_{Univ}) = 7,62 \cdot 10^{-12} \text{ m/s}^2 \quad (4.2)$$

Being the electron base and "stable" particle, in our Universe, we consider it as a harmonic of the Universe itself. As a confirmation of that, we get the cosmic acceleration a_{Univ} of the collapse of the Universe directly from the new values of radius and mass of the Universe, shown on page 2; in fact:

$$a_{Univ} = \frac{c^2}{R_{Univ-New}} = 7,62 \cdot 10^{-12} \text{ m/s}^2, \text{ (as we know, from physics, that } a = \frac{v^2}{r} \text{) and:}$$

$$a_{Univ} = G \cdot M_{Univ-New} / R_{Univ-New}^2 = 7,62 \cdot 10^{-12} \text{ m/s}^2 \text{ (from the Newton's Universal Law of Gravitation)}$$

and the same value can be obtained from the data on the Coma galaxy cluster:



Fig. 4.1: Coma cluster.

Above Fig. 4.1 is a picture of the Coma cluster, about which hundreds of measurements are available; well, we know the following data about it:

$$\text{distance } \Delta x = 100 \text{ Mpc} = 3,26 \cdot 10^8 \text{ l.y.} = 3,09 \cdot 10^{24} \text{ m}$$

$$\text{speed } \Delta v = 6870 \text{ km/s} = 6,87 \cdot 10^6 \text{ m/s.}$$

Then, from physics, we know that:

$$\Delta x = \frac{1}{2} a \cdot \Delta t^2 = \frac{1}{2} (a \cdot \Delta t) \cdot \Delta t = \frac{1}{2} \Delta v \cdot \Delta t, \text{ from which: } \Delta t = \frac{2 \cdot \Delta x}{\Delta v}, \text{ which, if used in the definition of acceleration } a_{Univ}, \text{ yields:}$$

$$a_{Univ} = \frac{\Delta v}{\Delta t} = \frac{\Delta v}{\frac{2 \cdot \Delta x}{\Delta v}} = \frac{(\Delta v)^2}{2 \cdot \Delta x} = a_{Univ} \cong 7,62 \cdot 10^{-12} \text{ m/s}^2, \text{ cosmic acceleration} \quad (4.3)$$

after that we used data on Coma cluster, indeed.

This is the acceleration by which all our visible Universe is accelerating towards the center of mass of the whole Universe.

For sure you have realized that: $g_e = a_{Univ}$ sharp to decimals. The electron is really a harmonic.

Physics in many universities:

As the rotation speed of galaxies is too high and with an anomalous link with the radius, and being that true also for clusters and for all big objects, someone decided to invent lots of invisible matter and energy, so going against any form of plausibility. There's no direct proof for the existence of dark matter! Moreover, dark matter is one of the most strange objects ever invented by the official science, as it's very dense, very heavy, dark, but also transparent; then, they put on it just one characteristic of the common matter: the gravity, in order to make their calculations match, but it's different in all the other characteristics, where they don't care. Moreover, the dark matter, even if it is very dense and subject to gravity, does not collapse to the centre of the galaxy....

Also their problems with the too high density of the Universe led them to state the existence of mysterious dark matter in the Universe.

Rubino's physics:

The density of the Universe, in the physics I show, is already plausible and consistent. Moreover, I say the extra speed on galaxies and clusters is due to the tidal force exerted by all the surrounding Universe on them, through a_{Univ} ; as well as the Earth, which exerts a tidal force on the Moon, so forcing it to spin as fast as to show to the Earth itself always the same side.

And the size of a_{Univ} is, as chance would have it, the same size of the gravitational acceleration at the borders of objects as big as galaxies.



Andromeda galaxy (M31):
 Distance: 740 kpc; $R_{Gal}=30$ kpc;
 Visible Mass $M_{Gal} = 3 \cdot 10^{11} M_{Sun}$;
 Suspect Mass (+Dark) $M_{+Dark} = 1,23 \cdot 10^{12} M_{Sun}$;
 $M_{Sun}=2 \cdot 10^{30}$ kg; 1 pc= 3,086 10^{16} m;

Fig. 4.2: Andromeda galaxy (M31).

By balancing centrifugal and gravitational forces for a star at the edge of a galaxy:

$$m_{star} \frac{v^2}{R_{Gal}} = G \frac{m_{star} M_{Gal}}{R_{Gal}^2}, \text{ from which: } v = \sqrt{\frac{GM_{Gal}}{R_{Gal}}}$$

On the contrary, if we also consider the tidal contribution due to a_{Univ} , i.e. the one due to all the Universe around, we get:

$$v = \sqrt{\frac{GM_{Gal}}{R_{Gal}} + a_{Univ} R_{Gal}}; \text{ let's figure out, for instance, in M31, how many } R_{Gal} \text{ (how many k times) far away from}$$

the center of the galaxy the contribution from a_{Univ} can save us from supposing the existence of dark matter:

$$\sqrt{\frac{GM_{+Dark}}{kR_{Gal}}} = \sqrt{\frac{GM_{Gal}}{kR_{Gal}} + a_{Univ} kR_{Gal}}, \text{ so: } k = \sqrt{\frac{G(M_{+Dark} - M_{Gal})}{a_{Univ} R_{Gal}^2}} \cong 4, \text{ therefore, at } 4R_{Gal} \text{ far away, the}$$

existence of a_{Univ} makes us obtain the same high speeds observed, without any dark matter. Moreover, at $4R_{Gal}$ far away, the contribution due to a_{Univ} is dominant.

At last, we notice that a_{Univ} has no significant effect on objects as small as the solar system; in fact:

$$G \frac{M_{Sun}}{R_{Earth-Sun}} \cong 8,92 \cdot 10^8 \gg a_{Univ} R_{Earth-Sun} \cong 1,14 .$$

All these considerations on the link between a_{Univ} and the rotation speed of galaxies are widely open to further speculations and the equation through which one can take into account the tidal effects of a_{Univ} in the galaxies can have a somewhat different and more difficult look, with respect to the above one, but the fact that practically all galaxies have dimensions in a somewhat narrow range ($3 - 4 R_{Milky\ Way}$ or not so much more) doesn't seem to be like that just by chance, and, in any case, none of them have radii as big as tents or hundreds of $R_{Milky\ Way}$, but rather by just some times. In fact, the part due to the cosmic acceleration, by zeroing the centripetal acceleration in some phases of the revolution of galaxies, would fringe the galaxies themselves, and, for instance, in M31, it equals the gravitational part at a radius equal to:

$$\frac{GM_{M31}}{R_{Gal-Max}} = a_{Univ} R_{Gal-Max}, \text{ from which:}$$

$$R_{Gal-Max} = \sqrt{\frac{GM_{M31}}{a_{Univ}}} \cong 2,5 R_{M31}; \quad (4.4)$$

in fact, maximum radii ever observed in galaxies are not so different from this.

5- Unification between Gravity and Electromagnetism, in both cases.

Physics in many universities:

There is no possibility to link those two similar forces, in the physics of many universities. They tried many times through little understandable and little striking attempts, with the String Theory, in environments with tens of rolled dimensions (unjustifiable, unprovable and not plausible).

Rubino's physics:

Here, such a possibility comes out spontaneously.

Now, if we use the (1.11) in the (4.1) we get:

$$\frac{1}{4pe_0} \cdot \frac{e^2}{r_e} = \frac{GM_{Univ} m_e}{R_{Univ}} \quad ! \quad (5.1)$$

As an alternative, we know that the Fine Structure Constant is 1 divided by 137 and it's given by the following equation:

$$a = \frac{1}{137} = \frac{\frac{1}{4pe_0} e^2}{\frac{h}{2p} c}, \text{ but we also see that } \frac{1}{137} \text{ is given by the following equation, which can be considered}$$

suitable, as well, as the Fine Structure Constant:

$$a = \frac{1}{137} = \frac{\frac{Gm_e^2}{r_e}}{hn_{Univ}} \text{ , where } n_{Univ} = \frac{1}{T_{Univ}} \quad (T_{Univ} \text{ is the new one, just obtained in (1.12)!)} \quad (5.2)$$

So, we could set the following equation and deduce the relevant consequences:

$$\left(a = \frac{1}{137} \right) = \frac{\frac{1}{4pe_0} e^2}{\frac{h}{2p} c} = \frac{\frac{Gm_e^2}{r_e}}{hn_{Univ}}, \text{ from which: } \frac{1}{4pe_0} e^2 = \frac{c}{2pn_{Univ}} \frac{Gm_e^2}{r_e} = R_{Univ} \frac{Gm_e^2}{r_e}$$

$$\text{Therefore, we can write: } \frac{1}{4pe_0} \frac{e^2}{R_{Univ}} = \frac{Gm_e^2}{r_e} .$$

Now, if we temporarily imagine, out of simplicity, that the mass of the Universe is made of N electrons e^- and positrons e^+ , we could write:

$M_{Univ} = N \cdot m_e$, from which: $\frac{1}{4\pi\epsilon_0} \frac{e^2}{R_{Univ}} = \frac{GM_{Univ}m_e}{\sqrt{N}\sqrt{N}r_e}$, or also:

$$\frac{1}{4\pi\epsilon_0} \cdot \frac{e^2}{(R_{Univ}/\sqrt{N})} = \frac{GM_{Univ}m_e}{\sqrt{N}r_e} . \quad (5.3)$$

If now we suppose that $R_{Univ} = \sqrt{N}r_e$ (5.4)

or, by the same token, $r_e = R_{Univ}/\sqrt{N}$, then (5.3) becomes: $\frac{1}{4\pi\epsilon_0} \cdot \frac{e^2}{r_e} = \frac{GM_{Univ}m_e}{R_{Univ}}$! that is (5.1) again.

Now, first of all, we see that the supposition $R_{Univ} = \sqrt{N}r_e$ is very right, as from the definition of N above given, we have:

$$N = \frac{M_{Univ}}{m_e} \cong 1,75 \cdot 10^{85} , \text{ from which: } \sqrt{N} \cong 4,13 \cdot 10^{42} \text{ and } R_{Univ} = \sqrt{N}r_e \cong 1,18 \cdot 10^{28} m , \text{ that is the very}$$

R_{Univ} value.

Equation (5.1) is of a paramount importance and has got a very clear meaning, as it tells us that the electrostatic energy of an electron in an electron-positron pair (e^+e^- adjacent) is exactly the gravitational energy given to this pair by the whole Universe M_{Univ} at an R_{Univ} distance! (and vice versa)

Therefore, an electron gravitationally cast by an enormous mass M_{Univ} for a very long time T_{Univ} and through a long travel R_{Univ} , gains a gravitationally originated kinetic energy so that, if later it has to release it all together, in a short time, through a collision, for instance, and so through an oscillation of the e^+e^- pair - spring, it must transfer a so huge gravitational energy indeed, stored in billion of years that if this energy were to be due just to the gravitational potential energy of the so small mass of the electron itself, it should fall short by many orders of size. Therefore, the effect due to

the immediate release of a big stored energy, by e^- , which is known to be $\frac{GM_{Univ}m_e}{R_{Univ}}$, makes the electron “appear”,

in the very moment, and in a narrow range (r_e), to be able to release energies coming from forces stronger than the gravitational one.

I also remark here, that the energy represented by (5.1), as chance would have it, is really $m_e c^2$!, that is a sort of run taking kinetic energy, had by the free falling electron-positron pair, and that Einstein assigned to the rest matter, unfortunately without telling us that such a matter is never at rest with respect to the center of mass of the Universe, as we all are inexorably free falling, even though we see one another at rest; from which is its essence of gravitationally originated kinetic energy $m_e c^2$:

$$m_e c^2 = \frac{1}{4\pi\epsilon_0} \cdot \frac{e^2}{r_e} = \frac{GM_{Univ}m_e}{R_{Univ}} .$$

Finally, we directly prove the equation (5.4) $R_{Univ} = \sqrt{N}r_e$ (proof by Leonardo Rubino):

the radius of the Universe is equal to the classic radius of the electron multiplied by the square root of the number of electrons (and positrons) N in which the Universe can be thought as made of. (We know that in reality almost all the matter in the Universe is not made of e^+e^- pairs, but rather of p^+e^- pairs of hydrogen atoms H, but we are now interested in considering the Universe as made of basic bricks, or in fundamental harmonics, if you like, and we know that electrons and positrons are basic bricks, as they are stable, while the proton doesn't seem so, and then it's neither a fundamental harmonic, and so nor a basic brick).

Suppose that every pair e^+e^- (or, for the moment, also p^+e^- (H), if you like) is a small spring (in fact all the matter follows the Hooke's Law; see point 7), and that, for the same reason, the Universe is a big oscillating spring (now contracting towards its center of mass) with an oscillation amplitude obviously equal to R_{Univ} , which is made of all microoscillations of e^+e^- pairs.

And, at last, we confirm that those micro springs are all randomly spread out in the Universe, as it must be; therefore, one is oscillating to the right, another to the left, another one upwards and another downwards, and so on. Moreover e^+

and e^- components of each pair are not fixed, so we will not consider $N/2$ pairs oscillating with an amplitude $2r_e$, but N electrons/positrons oscillating with an amplitude r_e .

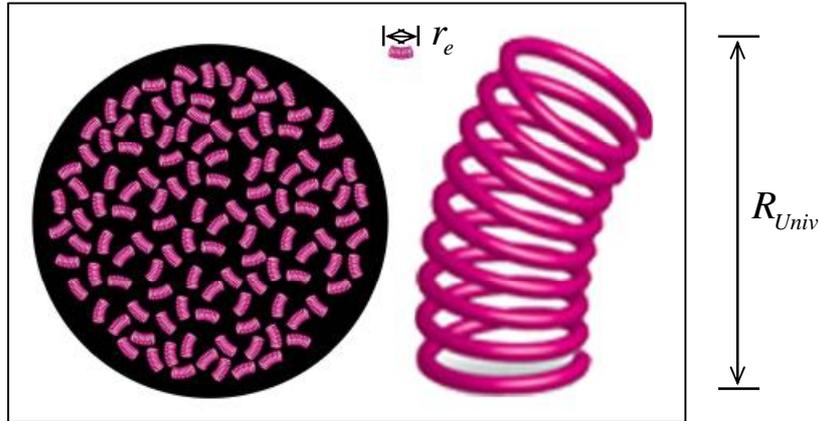


Fig. 5.1: The Universe represented as a set of many (N) small springs, oscillating on random directions, or as a single big oscillating spring.

Now, as those micro oscillations are randomly oriented, their random composition can be shown as in the figure below.

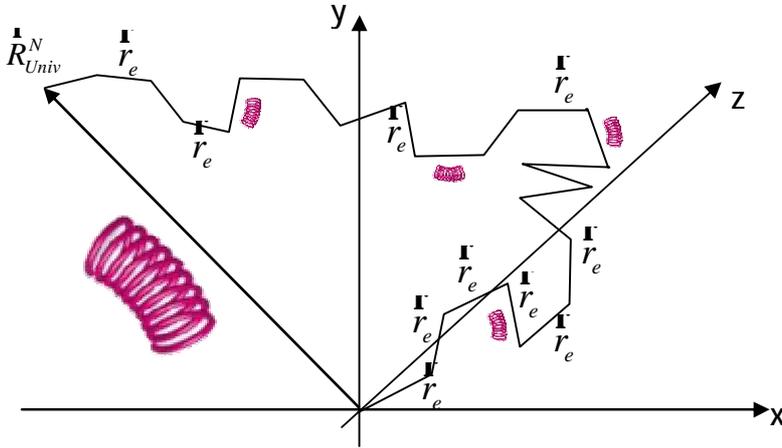


Fig. 5.2: Composition of N micro oscillations \mathbf{r}_e randomly spread out, so forming the global oscillation R_{Univ} .

We can obviously write that: $\mathbf{R}_{Univ}^N = \mathbf{R}_{Univ}^{N-1} + \mathbf{r}_e$ and the scalar product \mathbf{R}_{Univ}^N with itself yields:
 $\mathbf{R}_{Univ}^N \cdot \mathbf{R}_{Univ}^N = (R_{Univ}^N)^2 = (R_{Univ}^{N-1})^2 + 2\mathbf{R}_{Univ}^{N-1} \cdot \mathbf{r}_e + r_e^2$; we now take the mean value:

$$\langle (R_{Univ}^N)^2 \rangle = \langle (R_{Univ}^{N-1})^2 \rangle + \langle 2\mathbf{R}_{Univ}^{N-1} \cdot \mathbf{r}_e \rangle + \langle r_e^2 \rangle = \langle (R_{Univ}^{N-1})^2 \rangle + \langle r_e^2 \rangle, \quad (5.5)$$

as $\langle 2\mathbf{R}_{Univ}^{N-1} \cdot \mathbf{r}_e \rangle = 0$, because \mathbf{r}_e can be oriented randomly over 360° (or over 4π sr, if you like), so a vector averaging with it, as in the previous equation, yields zero.

We so rewrite (5.5): $\langle (R_{Univ}^N)^2 \rangle = \langle (R_{Univ}^{N-1})^2 \rangle + \langle r_e^2 \rangle$ and proceeding, on it, by induction:

(by replacing N with $N-1$ and so on):

$$\langle (R_{Univ}^{N-1})^2 \rangle = \langle (R_{Univ}^{N-2})^2 \rangle + \langle r_e^2 \rangle, \text{ and then: } \langle (R_{Univ}^{N-2})^2 \rangle = \langle (R_{Univ}^{N-3})^2 \rangle + \langle r_e^2 \rangle \text{ etc, we get:}$$

$$\langle (R_{Univ}^N)^2 \rangle = \langle (R_{Univ}^{N-1})^2 \rangle + \langle r_e^2 \rangle = \langle (R_{Univ}^{N-2})^2 \rangle + 2\langle r_e^2 \rangle = \dots = 0 + N\langle r_e^2 \rangle = N\langle r_e^2 \rangle, \text{ that is:}$$

$$\langle (R_{Univ}^N)^2 \rangle = N\langle r_e^2 \rangle, \text{ from which, by taking the square roots of both sides:}$$

$$\sqrt{\langle (R_{Univ}^N)^2 \rangle} = R_{Univ} = \sqrt{N} \sqrt{\langle r_e^2 \rangle} = \sqrt{N} \cdot r_e, \text{ that is:}$$

$$R_{Univ} = \sqrt{N} \cdot r_e \quad !$$

(proof by Leonardo Rubino)

6- The fourth dimension, unjustifiable, unascertainable and not plausible.

Physics in many universities:

In the Theory of Relativity which is taught in many universities, the Universe is 4-dimensional and the fourth dimension would be the time. It works approximately like that. Despite that, none of us can feel the fourth length, when observing or touching, with a hand, an object in this Universe.

Forget the tens of rolled on themselves dimensions from the String Theory, in which you can find analytical monstrosities, useful just for some data matching, so definitely leaving the plausibility and the simplicity invoked by the Ockham's Razor.

Rubino's physics:

When at the school they taught us the Pythagorean Theorem, they told us that in a right-angled triangle the sum of the squared catheti is equal to the squared hypotenuse:

$$(r)^2 = (x)^2 + (y)^2$$

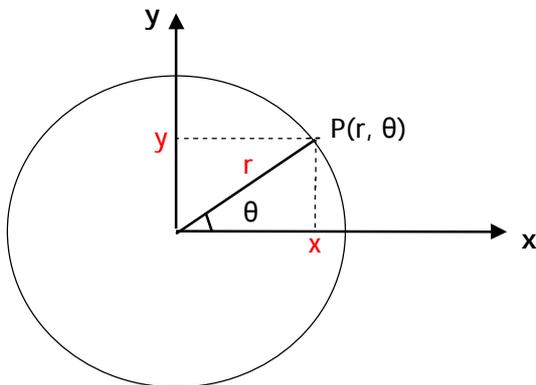


Fig. 6.1.

Then, by studying the geometry in three dimensions, a new version of the Pythagorean Theorem comes out:

$$(r)^2 = (x)^2 + (y)^2 + (z)^2$$

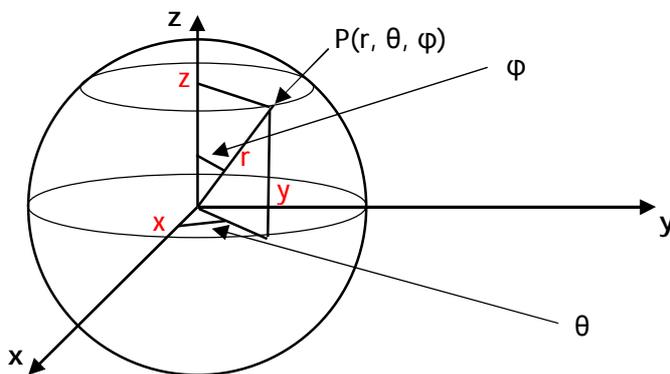


Fig. 6.2.

If now we want to go on towards a mysterious 4-dimensional situation, then we would expect a version like the following one:

$$(r)^2 = (x)^2 + (y)^2 + (z)^2 + (x_4)^2$$

On the contrary, in the Special Relativity, the squared "length" of the 4-vector position is like this:

$$(\Delta x)^2 = (\Delta x_1)^2 + (\Delta x_2)^2 + (\Delta x_3)^2 - (\Delta x_4)^2, \quad \text{that is:}$$

$$(r)^2 = (x)^2 + (y)^2 + (z)^2 - (x_4)^2 \quad (6.1)$$

But then, for the 4-dimensional component, do we have to use the + sign, as per the Pythagorean Theorem, or the – sign, as required by Einstein in (6.1)?

Or better, as I think, the time has nothing to do with any mysterious fourth dimension and the Universe goes on being three dimensional?

All in all, the Universe looks three dimensional to all of us and if anybody asked us to show him the fourth dimension, at least about me, we would find difficult to show it.

That – sign in the (6.1) just tells us that time has nothing to do with a fourth dimension. On the contrary, all the 4-components which appear in the 4-quantities of the Theory of Relativity, more wisely refer to the physical quantities on the falling of all the matter in the Universe, with speed c, toward the center of mass of the Universe itself.

In fact, the fourth component of the 4-vector position is really ct, the fourth component of the 4-vector momentum is mc and the fourth component of the energy is really mc².

Rather, that – sign is typical for the vectorial compositions, such as those in the description of the Michelson & Morley experiment, where you can see vectorial compositions like the following:

$c^2 - v^2$ which, when multiplied by the time squared, yields: $c^2 t^2 - v^2 t^2 = x_4^2 - \bar{x}^2$, that is exactly an expression for the vectorial composition of two movements, one at speed v and another at speed c, and they want us to believe it's about a squared hypotenuse of a right-angled four dimensional hypertriangle.

Time is just the name which has been assigned to a mathematical ratio relation between two different spaces; when I say that in order to go from home to my job place it takes half an hour, I just say that the space from home to my job place corresponds to the space of half a clock circumference run by the hand of minutes. In my own opinion, no mysterious or spatially four-dimensional stuff, as proposed by the STR (Special Theory of Relativity). On the contrary, on a mathematical basis, time can be considered as the fourth dimension, as well as temperature can be the fifth and so on.

7- The speed limit c is unjustified in the official physics of many universities.

Physics in many universities:

In many universities, the speed of light (c=299.792,458 km/s) is an upper speed limit and is constant to all inertial observers, by “principle” (unexplainable and unexplained). Such a concept, as a matter of fact, is presented as a “principle” by them.

Rubino's physics:

The speed of light (c=299.792,458 km/s) is an upper speed limit, but neither by an unexplainable mystery, nor by a principle, as asserted in the STR and also by Einstein himself, but rather because (and still in my opinion) a body cannot move randomly in the Universe where it's free falling with speed c, as it's linked to all the Universe around, as if the Universe were a spider's web that when the trapped fly tries to move, the web affects that movement and as much as those movements are wide (v~c), that is, just to stick to the web example, if the trapped fly just wants to move a wing, it can do that almost freely (v<<c), while, on the contrary, if it really wants to fly widely from one side to the other on the web (v~c), the spider's web resistance becomes high (mass which tends to infinite etc).

Now, we carry out a reasoning which shows us the link between the Theory of Relativity and the collapse, indeed, of the Universe, with speed c.

A system made of a particle and an antiparticle, as well as a Hydrogen atom, and as well as a gravitational system, as the whole Universe is, behaves as springs which follow the Hooke's Law.

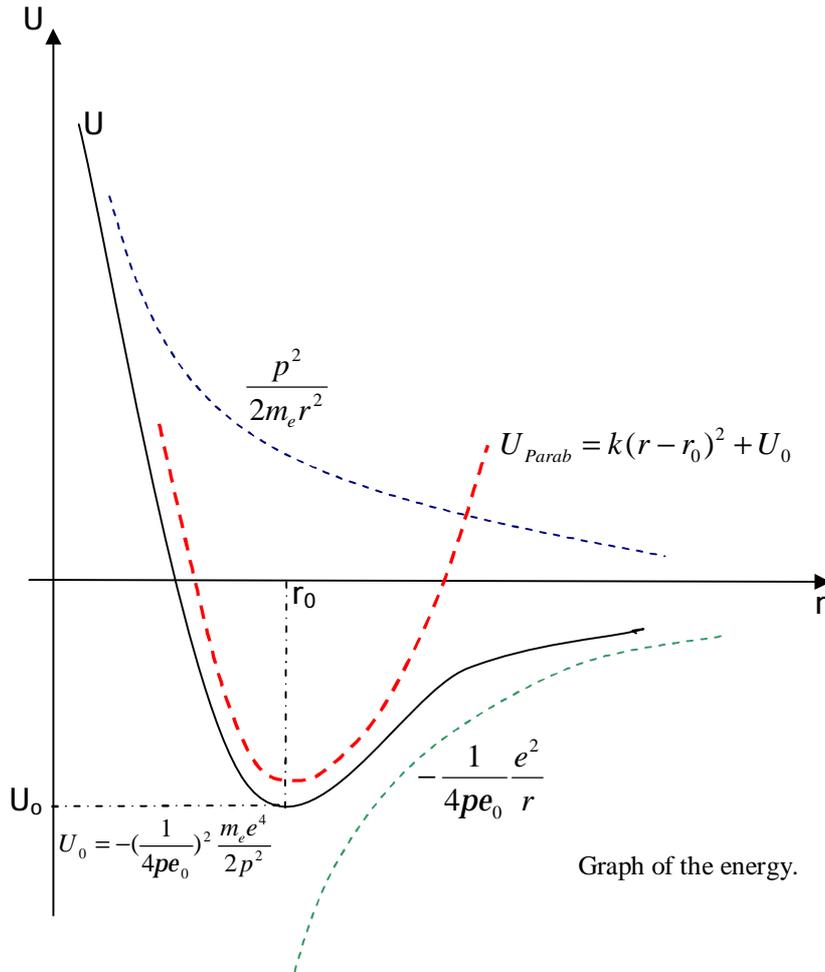
Proof:

in polar coordinates, for an electron orbiting around a proton, there is a balancing between the electrostatic attraction and the centrifugal force:

$$F_r = -\frac{1}{4\pi\epsilon_0} \frac{e^2}{r^2} + m_e \left(\frac{dj}{dt}\right)^2 r = -\frac{1}{4\pi\epsilon_0} \frac{e^2}{r^2} + \frac{p^2}{m_e r^3}, \quad \text{where } \frac{dj}{dt} = w \text{ and } p = m_e v \cdot r = m_e w r r = m_e w r^2$$

Let's figure out the corresponding energy by integrating such a force over the space:

$$U = -\int F_r dr = -\frac{1}{4\pi\epsilon_0} \frac{e^2}{r} + \frac{p^2}{2m_e r^2}. \quad (7.1)$$



The point of minimum in (r_0, U_0) is a balance and stability point ($F_r=0$) and can be calculated by zeroing the first derivative of (7.1) (i.e. setting $F_r=0$ indeed).

Moreover, around r_0 , the curve for U is visibly replaceable by a parabola U_{Parab} , so, in that neighbourhood, we can write:

$$U_{Parab} = k(r - r_0)^2 + U_0, \text{ and the relevant force is: } F_r = -\partial U_{Parab} / \partial r = -2k(r - r_0)$$

which is, as chance would have it, an elastic force ($F = -kx$ - Hooke's Law).



Now we prove that the Theory of Relativity is just an interpretation of the oscillating Universe just described, contracting with speed c:

if in our reference system I, where we (the observers) are at rest, there is a body whose mass is m and it's at rest, we can say:

$v_1 = 0$ and $E_1 = \frac{1}{2} m v_1^2 = 0$. If now I give kinetic energy to it, it will jump to speed v_2 , so that, obviously:

$E_2 = \frac{1}{2} m v_2^2$ and its delta energy of GAINED energy $\Delta_{\uparrow} E$ (delta up) is:

$$\Delta_{\uparrow} E = E_2 - E_1 = \frac{1}{2} m v_2^2 - 0 = \frac{1}{2} m (v_2 - 0)^2 = \frac{1}{2} m (\Delta v)^2, \text{ with } \Delta v = v_2 - v_1.$$

Now, we've obtained a Δv which is simply $v_2 - v_1$, but this is a PARTICULAR situation and it's true only when it starts from rest, that is, when $v_1 = 0$.

On the contrary: $\Delta_{\uparrow} E = E_2 - E_1 = \frac{1}{2} m v_2^2 - \frac{1}{2} m v_1^2 = \frac{1}{2} m (v_2^2 - v_1^2) = \frac{1}{2} m (\Delta_V v)^2$, where $\Delta_V v$ is a vectorial delta:

$\Delta_V v = \sqrt{(v_2^2 - v_1^2)}$; therefore, we can say that, apart from the particular case when we start from rest ($v_1 = 0$), if we are still moving, we won't have a simple delta, but a vectorial one; this is simple base physics.

Now, in our reference system I, where we (the observers) are at rest, if we want to make a body, whose mass is m_0 and originally at rest, get speed V , we have to give it a delta v indeed, but for all what has been said so far, as we are already moving in the Universe, (and with speed c), such a delta v must withstand the following (vectorial) equality:

$$V = \Delta_V v = \sqrt{(c^2 - v_{New-Abs-Univ-Speed}^2)}, \quad (7.2)$$

where $v_{New-Abs-Univ-Speed}$ is the new absolute speed the body (m_0) looks to have, not with respect to us, but with respect to the Universe and its center of mass.

As a matter of fact, a body is inexorably linked to the Universe where it is, in which, as chance would have it, it already moves with speed c and therefore has got an intrinsic energy $m_0 c^2$.

In more details, as we want to give the body (m_0) a kinetic energy E_K , in order to make it gain speed V (with respect to us), and considering that, for instance, in a spring which has a mass on one of its ends, for the harmonic motion law, the speed follows a harmonic law like:

$$v = (wX_{Max}) \sin a = V_{Max} \sin a \quad (v_{New-Abs-Univ-Speed} = c \sin a, \text{ in our case}),$$

and for the harmonic energy we have a harmonic law like:

$$E = E_{Max} \sin a \quad (m_0 c^2 = (m_0 c^2 + E_K) \sin a, \text{ in our case}),$$

we get $\sin a$ from the two previous equations and equal them, so getting:

$$v_{New-Abs-Univ-Speed} = c \frac{m_0 c^2}{m_0 c^2 + E_K},$$

now we put this expression for $v_{New-Abs-Univ-Speed}$ in (7.2) and get:

$$V = \Delta_V v = \sqrt{(c^2 - v_{New-Abs-Univ-Speed}^2)} = \sqrt{[c^2 - (c \frac{m_0 c^2}{m_0 c^2 + E_K})^2]} = V, \text{ and we report it below:}$$

$$V = \sqrt{[c^2 - (c \frac{m_0 c^2}{m_0 c^2 + E_K})^2]} \quad (7.3)$$

If now we get E_K from (7.3), we have:

$$E_K = m_0 c^2 \left(\frac{1}{\sqrt{1 - \frac{V^2}{c^2}}} - 1 \right) ! \text{ which is exactly the Einstein's relativistic kinetic energy!}$$

If now we add to E_K such an intrinsic kinetic energy of m_0 (which also stands "at rest" – rest with respect to us, not with respect to the center of mass of the Universe), we get the total energy:

$$E = E_K + m_0 c^2 = m_0 c^2 + m_0 c^2 \left(\frac{1}{\sqrt{1 - \frac{V^2}{c^2}}} - 1 \right) = \frac{1}{\sqrt{1 - \frac{V^2}{c^2}}} m_0 c^2 = g \cdot m_0 c^2, \text{ that is the well known}$$

$E = g \cdot m_0 c^2$ (of the Special Theory of Relativity).

All this after that we supposed to bring kinetic energy to a body at rest (with respect to us).

In case of lost energies (further phase of the harmonic motion), the following one must be used:

$$E = \frac{1}{g} \cdot m_0 c^2 \quad (\text{Rubino}) \quad (7.4)$$

which is intuitive just for the simple reason that, with the increase of the speed, the coefficient $1/g$ lowers m_0 in favour of the radiation, that is of the lost of energy; unfortunately, this is not provided for by the Theory of Relativity, like in (7.4).

For a convincing proof of (7.4) and of some of its implications, I have further files about.

8- No links between microscopic and macroscopic worlds, in the physics of many universities.

Physics in many universities:

As far as I know, in the physics of many universities there is no sign useful to state a similarity between the particles and the cosmological worlds. On the contrary, the General Theory of Relativity of Einstein and the quantum world do not look to be very compatible, to them.

Rubino's physics:

By the (4.2) at page 5, already, we saw the gravity acceleration on an electron is equal to the cosmic acceleration a_{Univ} . Moreover, by the (3.3) at page 4 we saw that the electron and the Universe can be assigned the same temperature of 2,73K. By the (3.2), then we established the link between the electron and the Planck's Constant, through the Universe.

And, at last, by the (5.2), through the Fine Structure Constant, which is originally defined in an atomic/electronic context, we justified a much older Universe, and all this with an accuracy to the decimals.

See also the (9.1), on the next point, where the infinitesimal world Planck's Constant is linked to the macroscopic world of the cosmic acceleration, going through the Heisenberg's Principle of Indetermination.

9- No link between the Universe and the Heisenberg Indetermination Principle, in the physics of many universities.

Physics in many universities:

As far as I know, in the physics of many universities there is no sign of a direct link between the world of cosmological objects and the microscopic quantized one.

Rubino's physics:

The Universe is cyclical. Even though you do not want to accept that, Fourier would make us accept it anyway, as through his developments one can even approach a stretch of a line by sine and cosine, and so through cycles, so providing a cyclical interpretation also where this shows unlikely.

The Universe has a lifetime (a period) very long, but not infinite; for statistical reasons related to the Indetermination Principle, I tell you that when it was expanding, it couldn't do that to the infinite, as it had to grant its disappearing (its collapse) as well as it did, through the same statistical principles, to appear (see also point 14 on page 18).

Now, as its period is not infinite, its frequency is not zero and all the frequencies in the Universe must be a multiple of it, which is the smallest of all. This is the origin of the quantization!

The Heisenberg Uncertainty Principle is a consequence of the essence of the macroscopic and a_{Univ} accelerating Universe, collapsing with speed c :

according to this principle, the product $\Delta x \Delta p$ must keep above $\mathbf{h}/2$, and with the equal sign, when Δx is at a maximum, Δp must be at a minimum, and vice versa:

$$\Delta p \cdot \Delta x \geq \mathbf{h}/2 \quad \text{and} \quad \Delta p_{\max} \cdot \Delta x_{\min} = \mathbf{h}/2 \quad (\mathbf{h} = h/2\pi)$$

Now, as Δp_{\max} we take, for the electron (“stable” and base particle in our Universe!), $\Delta p_{\max} = (m_e \cdot c)$ and as Δx_{\min} for the electron, as it is a harmonic of the Universe in which it is (just like a sound can be considered as made of its harmonics), we have: $\Delta x_{\min} = a_{Univ} / (2p)^2$, as a direct consequence of the characteristics of the Universe in which it is; in fact, $R_{Univ} = a_{Univ} / w_{Univ}^2$, as we know from physics that $a = w^2 R$, and then $w_{Univ} = 2p / T_{Univ} = 2pn_{Univ}$, and as w_e of the electron (which is a harmonic of the Universe) we therefore take the “ n_{Univ} -th” part of w_{Univ} , that is:

$|w_e| = |w_{Univ} / n_{Univ}|$ like if the electron of the electron-positron pairs can make oscillations similar to those of the Universe, but through a speed-amplitude ratio which is not the (global) Hubble Constant, but through H_{Global} divided by n_{Univ} , and so, if for the whole Universe: $R_{Univ} = a_{Univ} / w_{Univ}^2$, then, for the electron:

$$\Delta x_{\min} = \frac{a_{Univ}}{(w_e)^2} = \frac{a_{Univ}}{(w_{Univ} / n_{Univ})^2} = \frac{a_{Univ}}{(2p)^2}, \text{ from which:}$$

$$\Delta p_{\max} \cdot \Delta x_{\min} = m_e c \frac{a_{Univ}}{(2p)^2} = 0,527 \cdot 10^{-34} \text{ [Js]} \quad (9.1)$$

and such a number ($0,527 \cdot 10^{-34}$ Js), as chance would have it, is really $\mathbf{h} / 2$!!

10- No surprising link between the Universe and the number of particles in it, in the physics of many universities.

Physics in many universities:

As far as I know, in the physics of many universities there is no sign of a surprising link between the Universe and the number of particles in it.

Rubino’s physics:

We saw, through the equations around the (5.3) that, once again with the electron, there is a strong link between mass and radius of the Universe and mass and radius of the electron, indeed.

11- Justification for masses and radii of galaxies, in my physics.

Physics in many universities:

As far as I know, in the physics of many universities there is no explanation for which the galaxies have got certain masses and radii and why they do not exceed some ranges.

Rubino’s physics:

Through the (4.4), already, we saw that by the tidal effect of the Universe on single galaxies, and so by the cosmic acceleration a_{Univ} , the radii and (as a consequence) the masses of galaxies are limited to a certain maximum size, such as the mass of the big ISOHDFS 27, as an example..

This subject must be developed and improved more.

12- On the total disagreement, between the theory and the measurements, on the lost energies.

Physics in many universities:

In Atomic Physics, when we talk about electrons falling to inner orbits, and so losing energy, the relativity around the well known equation $E = g \cdot m_0 c^2$ is not working properly and there comes the need to bring correction factors ad hoc and one find himself surrounded by giant corrective equations, in order to make calculations match with observations (Fock-Dirac etc).

Rubino's physics:

On the contrary, we already saw in (7.4) that, in case of energies released by the matter, the following holds:

$$E = \frac{1}{g} \cdot m_0 c^2 \quad (\text{Rubino}), \text{ not existing in the Einstein's STR.}$$

By using (7.4) in Atomic Physics, in order to figure out the ionization energies $\Delta_{\downarrow} E_Z$ of atoms with just one electron, but with a generic Z, we come to the following equation, for instance, which matches very well the experimental data:

$$\Delta_{\downarrow} E_Z = m_e c^2 \left[1 - \sqrt{1 - \left(\frac{Ze^2}{2e_0 hc} \right)^2} \right] \quad (12.1)$$

and for atoms with a generic quantum number n and generic orbits:

$$\Delta_{\downarrow} E_{Z-n} = m_e c^2 \left[1 - \sqrt{1 - \left(\frac{Ze^2}{4ne_0 hc} \right)^2} \right] \quad (\text{Wählin}) \quad (12.2)$$

Orbit (n)	Energy (J)	Orbit (n)	Energy (J)
1	2,1787 10 ⁻¹⁸	5	8,7147 10 ⁻²⁰
2	5,4467 10 ⁻¹⁹	6	6,0518 10 ⁻²⁰
3	2,4207 10 ⁻¹⁹	7	4,4462 10 ⁻²⁰
4	1,3616 10 ⁻¹⁹	8	3,4041 10 ⁻²⁰

Tab. 12.1: Energy levels in the hydrogen atom H (Z=1), as per (12.2).

On the contrary, the use of the here unsuitable $E = g \cdot m_0 c^2$ doesn't match the experimental data, but brings to complex corrections and correction equations (Fock-Dirac etc), which tries to "correct", indeed, an unsuitable use.

Again, in order to have clear proofs of (12.1) and (12.2), I have further files about.

13- On the absence of antimatter in our Universe.

Physics in many universities:

Many are the extravagant proposals, all accepted by the prevailing physics, on parallel universes made of antimatter, made ad hoc to give oneself an explanation for the fact that in our Universe the matter has prevailed over the antimatter. So doing, they provide for a naive answer to the question about where the antimatter has got to.

Rubino's physics:

The Universe shows as made of hydrogen, almost completely, but also of some helium.

So, we are talking about electrons, protons and neutrons. If then we consider that the neutron contains, for sure, a proton and an electron, we can roughly talk about just ELECTRONS and PROTONS.

Their antiparticles are the positron and the antiproton.

(When I say that a neutron contains, at least, a proton and an electron, it's like if I said that an egg contains a chick; now, you could argue that an egg, on the contrary, contains the albumen and the yolk (quarks), and not a chick, but as I'm certain that from that egg a chick will come out, then I go on thinking that egg=chick or, at least, egg>>chick)

If now we consider the PROTON, whose mass is 1836 times that of the ELECTRON, and if we make it reach the mass of the ELECTRON indeed, then the balance between + and - in the Universe is perfect, as it seems that the Universe contains the same number of PROTONS and ELECTRONS.

We have so given an explanation on why in the Universe the matter has prevailed over the antimatter: in fact, this is not true, as "matter" (+) and "antimatter" (-) were created (or the contrary, if you like) in a perfect balance and then, for some reason, (for sure related to the Anthropic Cosmological Principle) the balance of their masses gave up. That's it. (And the question on the parity, that is now and then violated, nowadays, is not a problem, in my opinion)

Than, of course, nowadays we can locally produce very little antiparticles, as well as by just sine and cosine waves we can produce all possible sounds (Fourier), but this is another kettle of fish.

14- Cosmic sphere, or dot, of the prevailing physics versus the legitimation to appear, for the +/- pairs, in my physics.

Physics in many universities:

In the descriptions of the very early Universe, the prevailing physics stops to the minimum dot, with subplanckian dimensions, beyond which any further supposition is meaningless, as all suppositions could be destroyed by the opposite ones. So doing, there won't take place that schopenhauerian jump, from physics to metaphysics, that I do.

In fact, we have to remember that the metaphysical needs of the scientist and of the human being, in general, are irrepressible, so that the physicist himself, with the relativity, as well as with the quantum mechanics, delegates the observer to the description of the behaviour of things, as if things didn't have just their own essence, not linked to us and to the sparkle animating us and which makes us observe, but they had also another one, strongly linked to the former.

The physicist is the subject who knows everything, without being known!

Rubino's physics:

A particle-antiparticle pair, which corresponds to an energy ΔE , is legitimated to appear anyhow, unless it lasts less than Δt , in such a way that $\Delta E \cdot \Delta t \leq \hbar/2$ (from the Heisenberg Indetermination Principle); in other words, it can appear provided that the observer doesn't have enough time, in comparison to his means of measure, to figure it out, so coming to the ascertainment of a violation of the Principle of Conservation of Energy.

In fact, the Universe seems to vanish towards a singularity, after its collapsing, or taking place from nothing, during its inverse Big Bang-like process, and so doing, it would be a violation of such a conservation principle, if not supported by the above Indetermination Principle.

The full releasing of every single small spring which stands (for instance) for the electron-positron pair, is nothing but the annihilation, with turning into photons of those two particles. In such a way, that pair wouldn't be represented anymore by a pointed wave, pointed in certain place and time, (for instance $\sin(x - vt)/(x - vt)$, or the similar $d(x - vt)$ of Dirac), where the pointed part would stand for the charge of the spring, but it will be represented by a function like $\sin(x - ct)$, omogeneous along all its trajectory, and this is what a photon is. This will happen when the collapsing of the Universe in its center of mass will be accomplished.

The appearing and the annihilation correspond to the expansion and collapsing of the Universe. Therefore, if we were in an expanding Universe, we wouldn't have any gravitational force, or it were opposite to how it is now, and it's not true that just the electric force can be repulsive, but the gravitational force, too, can be so (in an expanding Universe); now it's not so, but it was!

The most immediate philosophical consideration which could be made, in such a scenario, is that, how to say, anything can be born (can appear), provided that it dies, and quick enough; so the violation is avoided, or better, it's not proved/provable, and the Principle of Conservation of Energy is so preserved, and the contradiction due to the appearing of energy from nothing is gone around, or better, it is contradicting itself.

The proton, then, plays the role of a positron, with respect to the electron and it's heavier than it because of the possibility to exist that the fate couldn't deny to it, around the Anthropolical Cosmological Principle, as such a proton brings to atoms and cells for life which investigate over it.

When the collapse of the Univers will happen, a lot of things will happen, and the proton will irradiate all its mass and become a positron, ready to annihilate with the electron.

Thank you for your attention.

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Appendix: Physical Constants.

Boltzmann's Constant k: $1,38 \cdot 10^{-23} J / K$

Cosmic Acceleration a_{Univ} : $7,62 \cdot 10^{-12} m / s^2$

Distance Earth-Sun AU: $1,496 \cdot 10^{11} m$

Mass of the Earth M_{Earth} : $5,96 \cdot 10^{24} kg$

Radius of the Earth R_{Earth} : $6,371 \cdot 10^6 m$

Charge of the electron e : $-1,6 \cdot 10^{-19} C$
 Number of electrons equivalent of the Universe N : $1,75 \cdot 10^{85}$
 Classic radius of the electron r_e : $2,818 \cdot 10^{-15} m$
 Mass of the electron m_e : $9,1 \cdot 10^{-31} kg$
 Finestructure Constant $\alpha (\cong 1/137)$: $7,30 \cdot 10^{-3}$
 Frequency of the Universe \mathbf{n}_0 : $4,05 \cdot 10^{-21} Hz$
 Pulsation of the Universe $\mathbf{w}_0 (= H_{global})$: $2,54 \cdot 10^{-20} rad/s$
 Universal Gravitational Constant G : $6,67 \cdot 10^{-11} Nm^2 / kg^2$
 Period of the Universe T_{Univ} : $2,47 \cdot 10^{20} s$
 Light Year l.y.: $9,46 \cdot 10^{15} m$
 Parsec pc: $3,26 _ a.l. = 3,08 \cdot 10^{16} m$
 Density of the Universe ρ_{Univ} : $2,32 \cdot 10^{-30} kg / m^3$
 Microwave Cosmic Radiation Background Temp. T : $2,73 K$
 Magnetic Permeability of vacuum μ_0 : $1,26 \cdot 10^{-6} H / m$
 Electric Permittivity of vacuum ϵ_0 : $8,85 \cdot 10^{-12} F / m$
 Planck's Constant h : $6,625 \cdot 10^{-34} J \cdot s$
 Mass of the proton m_p : $1,67 \cdot 10^{-27} kg$
 Mass of the Sun M_{Sun} : $1,989 \cdot 10^{30} kg$
 Radius of the Sun R_{Sun} : $6,96 \cdot 10^8 m$
 Speed of light in vacuum c : $2,99792458 \cdot 10^8 m / s$
 Stephan-Boltzmann's Constant σ : $5,67 \cdot 10^{-8} W / m^2 K^4$
 Radius of the Universe (from the centre to us) R_{Univ} : $1,18 \cdot 10^{28} m$
 Mass of the Universe (within R_{Univ}) M_{Univ} : $1,59 \cdot 10^{55} kg$

Bibliography:

- 1) (*L. Rubino*) <http://vixra.org/pdf/1112.0087v1.pdf>
- 2) (*L. Rubino*) <http://vixra.org/pdf/1112.0085v1.pdf>
- 3) (*L. Rubino*) <http://vixra.org/pdf/1112.0082v1.pdf>
- 4) (*A. Liddle*) AN INTRODUCTION TO MODERN COSMOLOGY, 2nd Ed., Wiley.
- 5) (*A. S. Eddington*) THE EXPANDING UNIVERSE, Cambridge Science Classics.
- 6) (*L. Wählén*) THE DEADBEAT UNIVERSE, 2nd Ed. Rev., Colutron Research.
- 7) ENCYCLOPEDIA OF ASTRONOMY AND ASTROPHYSICS, Nature Publishing Group & Institute of Physics Publishing.
- 8) (*Keplero*) THE HARMONY OF THE WORLD.
- 9) (*H. Bradt*) ASTROPHYSICS PROCESSES, Cambridge University Press.
- 10) (*R. Sestl & H.K. Schmidt*) SPAZIOTEMPO – Vol. 1, Boringhieri.
- 11) (*M. Alonso & E.J. Finn*) FUNDAMENTAL UNIVERSITY PHYSICS III, Addison-Wesley.

12) (*V.A. Ugarov*) TEORIA DELLA RELATIVITA' RISTRETTA, Edizioni Mir.

13) (*C. Mencuccini e S. Silvestrini*) FISICA I - Meccanica Termodinamica, Liguori.

14) (*R. Feynman*) LA FISICA DI FEYNMAN I-II e III – Zanichelli.
