

## The time, space and matter.

From the chapter about the frequency we know **the time is equal to the distance**. But only for the speed of the light (ELMG or other waves with  $c=1$ ). Our experience is quite different. The Matter around us is moving not so fast. Where does the **difference** come from? The time is „faster“ then the distance of the moving matter through a space. It is suitable to predict a model for a matter (atoms from particles as electrons, protons, neutrons etc.) - **the matter as a parcel of waves under boundary conditions – a binding energy** (ELMG or gravity or strong nuclear interaction etc.) In that case there is a difference between the time and the length. The parcel is trembling, but its position oscillates around one point. In the whole universe does not exist a still matter or still anything else. What is the rest it is only a trembling of the parcel of the matter. One model (only model, not reality) is a binding energy. The ELMG (or other) waves of suitable frequency between two „mirrors“ or anything else. These bounded waves has a mass.  $m = \frac{E}{c^2}$

How to imagine the binding energy? Is there any reason to know exactly how the energy is bounded to the substance called a matter?

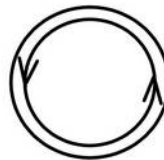


Fig. 1 – two kinds of formatted waves – in the line or in the circle

The binding energy – a bounded chaos. There is a value of an energy in spite of zero average energy of vacuum fluctuations. How the energy is bounded? Yes we could write down formulas from Louis de Broglie about matter waves. After to see there is no basic difference between ELMG waves and matter's waves. ELMG waves could be derived from matter waves. The matter waves seems as a parcel of interfering ELMG waves. See the next Fig. 2.



Fig. 3 – the probabilistic area of a particle

Yes, that's a true. What about the difference between the velocity of the particle to the velocity of ELMG waves. Where is the difference of the velocity hidden? There are plenty inner forms of the kinetic energy hidden in the particle. And we see such matter is always „trembling“. It's impossible to reach the temperature 0 Kelvin, only to come to that how close we want. We must know, the trembling of a particle, the rest mass, is the base of the existence of the particle. If the trembling disappeared then is no matter, either.



Fig. 2 – the imagination how waves there are bounded in the real universe

To accelerate such trembling matter with some direction we need a portion of an energy. Where does the energy come from? And what is the energy? The energy has two forms. The first form is a free energy – e.g. ELMG waves. We call it the kinetic energy. The second form is a binding energy – the matter. We call it the potential energy. But there must be at least two different wavelengths (oscillations). Three or more, of course. One of them is the base unit for others. The sum of energy is the difference between one wavelength and the base wavelength. The same case is with two different levels of a water surface. After that we obtain a force.

We could have the premise (perhaps bad) that the energy is equal to the frequency. In the same way with the matter. The experience - the high frequency is more destructive than the low frequency. Gamma rays then UV rays. From frequency we know THE TIME is equal to THE DISTANCE only for ELMG waves. We could add the MATTER (frozen energy). And replace a word distance by the word SPACE. It's more objective to say – the matter appears in a probabilistic area and how its bounded we know nothing. Such matter is

still trembling. The source of trembling is from inside (the mechanism of bounding) and outside (other trembling matter). For the first look see vacuum fluctuations. For the second look in our real world no particle is still – see Brown motion. The distance is a nature of SPACE.

TIME = SPACE = ENERGY (Matter) = FREQUENCY

Call it SPACETIMEMATTER (STM). The common mark is the frequency.

It's quite good if  $c = 1$  and  $h$  (Planck) = 1

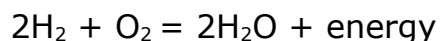
if  $E = mc^2$  then  $E = m$

if  $E = hf$  then  $E = f$

then  $E = m = f$

O.K. We have a parcel of a matter. How to accelerate it? Where to take some energy? Better to say to need a force with some path. Of course – to use a part of the binding energy (which is called a matter). By the annihilation process. If there is a contact of the matter with an antimatter – the result is a portion of ELMG waves. ELMG waves also has two kinds – positive and negative part – see the sinusoid. Another way how to obtain the energy - to use chemical reactions through the energy of electrons in atom's orbits. The electrons are bounded in their orbits – see more Planck's quantum theory and next theory of L. de Broglie and N. Bohr until E. Schrödinger. Why the electrons are bounded in such way of Pauli's exclusion principle – we don't know. In this way we could provide small amount energy without using of an annihilation process.

Anyway – we could take out a portion of energy from hidden energy of valence electrons.



However, this is not a full explanation. The matter after releasing of an amount of energy only more trembling. Without any order.

We must form an amount releasing energy to the required direction. To change a chaos to an order. It is a problem for engineers. Engineers solve it by using machines (thermodynamics) – to change a part chaos to the part order. To use a Laval jet for an example as a suitable machine in our case.

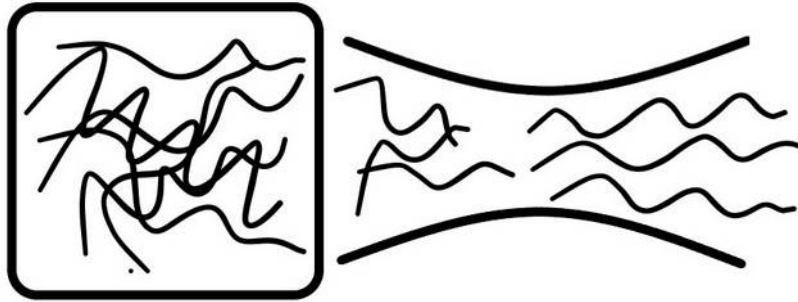


Fig. 3 – Laval jet (it's impossible in the real world to have ideal coherent rays for the next reason. The material of Laval jet which is made from bounded chaos. And nearest ideal coherent rays will be catch by the randomness fluctuations – the same has happened in hydromechanics – see the Reynolds number.

The machine e.g. Laval jet or a combustion engine could only change a total chaos (disorder) of fluctuations to partly order. But it is impossible in one ocean of fluctuation. We need two oceans of different fluctuations - imagine the oscillation which are different to each other. If we put them together we obtain a force.

By this way the matter could be accelerated with some direction. The mass of accelerated matter goes up. And the distance (time) of accelerated matter go down. Why? The reason is the frequency. If we go faster, frequency go up. And the wavelength go down. Suddenly we have an explanation for relativistic effects.

It is impossible for a matter to obtain a velocity of light. The same is valid for pressure of a matter. It is impossible to obtain infinity large density.