

Gravitation from Neutrino Flux

Space probe WMAP(Wilkinson Microwave Anisotropy Probe) confirms that Universe is container of neutrinos. Universe is ocean of neutrinos. This is third ocean. First ocean is water ocean. Second ocean is air ocean.

There are analogies between these oceans.

There are hurricanes and cyclones in water ocean and in air ocean and spiral galaxies in neutrino ocean.

Hurricanes have dimensions of up to thousands of kilometers, while tornados are smaller, extending only tens of kilometers. The linear dimension of a spiral galaxy are in the range of $10^{20} - 10^{22}$ meters.

Let us consider another peripheral point ; namely that according to the data of the Estonian astrophysicist Einesto et al. the large scale structure of the universe resembles honeycomb. This is the largest scale structure in a neutrinos ocean.

The linear scale of which is about 2×10^8 parsecs or 6×10^{24} meters.

For atmospheres or gases the linear scale for such cells would be $10^7 - 10^8$ meters, so that one would expect to see them on stars such as the sun.

The honeycomb-shaped feature circling the entire north pole of Saturn has captured the interest of scientists with NASA's Cassini mission. The Saturn north pole hexagon has not been visible to Cassini's visual cameras, because it's winter in that area , so the hexagon is under the cover of long polar night that lasts about 15 years. The hexagon appears to have remained fixed with Saturn's rotation rate and axis since first glimpsed by Voyager 26 years ago. The actual rotation rate of Saturn is still uncertain. Fragments of the hexagon is similar to Earth's polar vortex, which has winds blowing in a circular pattern around the polar region. Maybe these are honeycombs in water oceans dimensions linear for such cells would be 20,000—100,000 kilometers, but oceans of this size are not to found on Earth.

Europe's space agency reported Solitary waves in translation –(ESA News, March.7.08). In Cosmos there are Solitary waves. Solitary waves can start up in water, in air, in optical fibers, but not in vacuum.

In 2007, in Universe huge emptiness, by the size of the order billion Parsec is found (Press Release Lawrence Rudnick August.23.07 NRAO (USA)).

In this emptiness is no galaxies, or stars, or planets are present. In the neutrino ocean there can be emptiness like air bubbles in water or vacuum bubbles in air. According to my hypothesis, gravitation is caused by a neutrino flux in this huge emptiness which also does not have gravitation.

Newton's Law of gravity has the form:

$$(1) \quad \vec{F} = \gamma_c \frac{mM}{R^2},$$

where F is the interaction force between the masses m and M , R is the separation distance between their centers ,

$$\text{and } \gamma_c = 6.67 \times 10^{-11} \frac{\text{metr}^3}{\text{kgr} \times \text{sec}^2}.$$

The remaining units are $[F]$ (Newtons), $[M]$, $[m]$ (kilograms) and $[R]$ (meters).

Eq. (1) can now be written in the following form:

$$(2) \quad \vec{F} \frac{R^2}{m} = \vec{\gamma}_c M.$$

In this equation, the vector $\vec{F} \frac{R^2}{m}$ has units of $\frac{m \text{etr}^3}{\text{sec}^2}$, which can be considered

the rate of change of a flux $\vec{W} = \text{const} \vec{\gamma}_c M$. The *const* don't dimension.

Let's surround weight M with sphere of radius R with the that point where the weight M is located. The area of a surface of this sphere is equal $4\pi R^2$.

Then in each point of this sphere have the individual area will arise

acceleration equal $\text{const} \vec{\gamma}_c M / 4\pi R^2$. If in one of these points to place a body

with weight m , that on it will operate force $\vec{F} = \vec{\gamma}_c \frac{m M \text{const}}{4\pi R^2}$,

and comparing this formula with the law of universal gravitation of Newton, we will find that $\text{const} = 4\pi$.

But the question naturally arises: a flux of what?

Let us suppose, that it could be a 'neutrino flux.' To begin, we already know that the vacuum is saturated with neutrinos. Should a body of mass M intersect the trajectory of a neutrino, the neutrino usually will pass through on account of its very low interaction cross-section, but still with the effect that the neutrino flux rate of change increases somewhat. This reminds one of the accumulation of fish in a net. From this it follows that if neutrinos are sieved out of the vacuum itself (a specific mechanism is unknown to us), then in this vacuum there will be no gravitation. Seemingly, we are considering both types, electronic and mesonic, of neutrinos.

Thus, the gravitation constant is the variation of neutrino flux, as expressed in Eq. (2), for a mass of 4π kilogram.

Thus, we may propose, that the speed of motion of neutrinos within this mass will be larger than the speed of light within the same mass. This is similar to the fact that the speed of a fluid is larger at a constriction in its flow than where it is unconstrained.

Additional considerations: Concerning an analogy between hurricanes, tornados and spiral galaxies, which, aside from their scale, have much in common. Can this be an accident? Regarding scale, the difference in linear size between tornados and hurricanes is approximately a factor of 10-100. Hurricanes have dimensions of up to thousands of kilometers, while tornados are smaller, extending only tens of kilometers. On the other hand the density of water is 1000 times greater than that of air. The cubic root of 1000 equals 10. The linear dimensions of a spiral galaxy are in the range of $10^{20} - 10^{22}$ meters, i.e., the linear dimensions of a spiral galaxy are on the average 10^{16} times greater than the linear dimensions of a hurricane over water, and one may propose that the density of the neutrino flux is 10^{48} times less than the density of water. According to data from several authors (E.Y. Velikovski, Marks, Salay and others) the number of neutrinos in a cubic meter is 5×10^8 . This leads to a neutrino mass of $10^{-37} - 10^{-36}$ kilogram, which is very close to the figure published by V. A. Lyibimov, E. F. Tretiakov et al. in 1980. According to their experimental data the mass of the neutrino is 5×10^{-35} kilogram.

Prof. V.M. Lobashov from Moskau (Russia) received analogous result on fitting Troizk ν - mass.

The notions introduced above can be viewed as orientation estimates, from which it

follows that spiral galaxies are stationary hurricanes in the neutrinos ocean, which, for many researchers seems to be the probable source or carrier of the so called hidden mass in the universe. Analogous results can be received if comparing honeycomb structures in neutrino ocean and honeycomb in north pole of Saturn. According to professor V.M. Lobashov in Karlsruhe (Germany) this fits to the “KATRIN” exp. (Karlsruhe Tritium Neutrino experiment). Katrin is more forceful fitting than Troizk. Source of neutrinos in Katrin and in Troizk is tritium. Perhaps the “KATRIN” exp. can enhance the neutrino flux at entry using masses parameters. Perhaps this test my hypothesis of gravity.

