

# A New Universe Model

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We suggest a new universe model [1-4]. The universe is infinite, but it has a centre consisting of the tachyonic matter, which operates motion of the entire universe. Therefore the universe is stable. In the sun there is a centre consisting of the tachyonic matter, which operates motion of the sun system. In the earth there is a centre consisting of the tachyonic matter, which operates motion of the earth and the moon. In the moon there is a centre consisting of the tachyonic matter, which operates motion of the moon. In atomic nucleus there is a centre consisting of the tachyonic matter, which operates motion of the nucleus. Therefore atomic nuclei are stable.

In the Universe there are two stuffs[1-4]: (1) observable subluminal matter called tardyon and (2) unobservable superluminal string matter called tachyons. They coexist in motion. What are tachyons? Historically tachyons are described as particles which travel faster than light. Tachyon as particle with imaginary mass which is wrong. In our theory tachyon is a string which has no rest time and no rest mass. It is unobservable. Tachyons can be converted into tardyons and vice versa. Tardyonic rotating motion produces the centrifugal force but tachyonic string rotating motion produces the centripetal force which is force of gravity. Using the tachyonic string length  $\bar{x}_0$  we found the only string theory, other string theories are guesses. Using the coexistence

principle of tardyons and tachyons we find an equation that changed the universe:  $\bar{F} = -mc^2 / R$ .

We establish the expansion theory of universe without dark matter and dark energy. We unify the gravitational theory and particle theory and explain the behavior of the entire universe from the smallest to the largest scales. In the universe there are no quarks and no Higgs particles. We prove that Einstein's principles of equivalence is nonexistent. Therefore the general theory of relativity is wrong. In the universe there are no black holes. The geometrization of all physical fields is mathematical guesses which has no physical reality, because they do not consider and understand the tachyonic string theory.

Quantum teleportation, quantum computation and quantum information do not exist, because they are action-at-a-distance and unobservable.

We calculate Proton and Neutron radii

The Newtonian gravitation formula has the following form .

$$F = -G \frac{M_1 M_2}{R^2} \quad (1)$$

We assume

$$G = K_0 \rho_1 \rho_2 \quad (2)$$

Where  $\rho_1$  and  $\rho_2$  denote the densities of both  $M_1$  and  $M_2$  separately. Using the Cavendish experiment we determine  $K_0$ . In (2)  $G = 6.7 \times 10^{-8} \text{ cm}^3/\text{g sec}^2$  and the density of lead  $\rho_1 = \rho_2 = 11.37 \text{ g/cm}^3$ . From (2) we have

$$K_0 = 5.2 \times 10^{-10} \text{ cm}^9/\text{g}^3 \text{ sec}^2 \quad (3)$$

Thus,  $K_0$  is new gravitational constant.

By using (2) we determine the proton radius  $\gamma_p$ . From (2) we have

$$\gamma_p = \left( \frac{9K_0 m_p^2}{16\pi^2 G_s} \right)^{1/6} \quad (4)$$

In the nucleus the strong interaction prevails. We have [5].

$$\frac{\text{strong interaction}}{\text{gravitational interaction}} = \frac{G_s}{G} = 10^{38} \quad (5)$$

where  $G_s = 6.7 \times 10^{30} \text{ cm}^3/\text{g sec}^2$ . We know the proton mass  $m_p = 1.67 \times 10^{-24} \text{ g}$ . From (4) we obtain the proton radius

$$\gamma_p = 1.5 \times 10^{-15} \text{ cm} \quad (6)$$

In the same way we have the neutron radius

$$\gamma_n = 1.5 \times 10^{-15} \text{ cm} \quad (7)$$

## References

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