A Simple Mechanism for Gravitation

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Abstract: Gravity is a great mystery. No one has since given any machinery. In this paper we give a simple machinery. Gravity is the tachyon centripetal force. Anybody may understand gravitation. Using the tardyon and tachyon coexistence principle [1] $u\bar{u} = c^2$ （1）, where c is light velocity in vacuum, $u \le c$ tardyon velocity and $\bar{u} \ge c$ tachyon velocity. We deduce the new gravitation formula: $\bar{F} = -\frac{mc^2}{R}$.

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Figure 1 shows that the rotation ω of body A emits tachyon mass $\bar{m}$, which forms the tachyon and gravitation field and gives the body B revolutions u and $\bar{u}$.

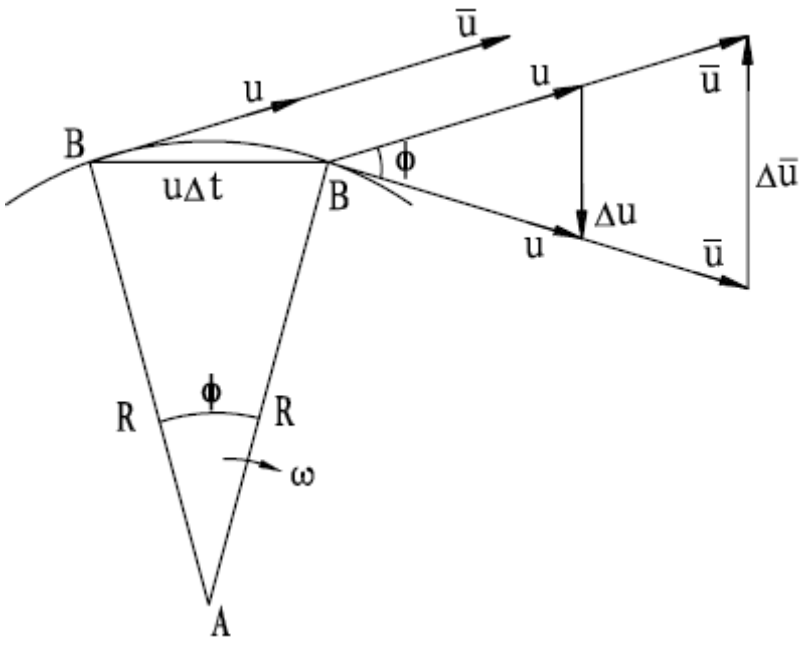

Fig.1. On body B $\frac{du}{dt}$ and $\frac{d\bar{u}}{dt}$ coexistence [2].

From Fig. 1 it follows

$$\frac{u\Delta t}{R} = \frac{\Delta u}{u} \quad . \qquad (2)$$

From (2) it follows the tardyon centripetal acceleration on the body B [2-5],

$$\frac{du}{dt}=\lim_{\substack{\Delta u\to 0\\ \Delta t\to 0}}\frac{\Delta u}{\Delta t}=\frac{u^2}{R}. \qquad (3)$$

From Fig. 1 it follows

$$\frac{u\Delta t}{R}=-\frac{\Delta \overline{u}}{\overline{u}}. \qquad (4)$$

From (4) and (1) it follows the tachyon centrifugal acceleration on the body B [2-5],

$$\frac{d\overline{u}}{dt}=\lim_{\substack{\Delta \overline{u}\to 0\\ \Delta t\to 0}}\frac{\Delta \overline{u}}{\Delta t}=-\frac{u\overline{u}}{R}=-\frac{c^2}{R}. \qquad (5)$$

On body B $\frac{du}{dt}$ and $\frac{d\overline{u}}{dt}$ coexistence.

From (3) it follows the tardyon centrifugal force on body B [2-5],

$$F=\frac{M_B u^2}{R}, \qquad (6)$$

where M_B is body B mass.

From (5) it follows the tachyon centripetal force on body B, that is gravity [2-5],

$$\overline{F}=-\frac{mc^2}{R}, \qquad (7)$$

where m is the gravitation mass converted into by tachyon mass $\overline{m}$ which is unobservable but m is observable. On body B F and $\overline{F}$ coexistence.

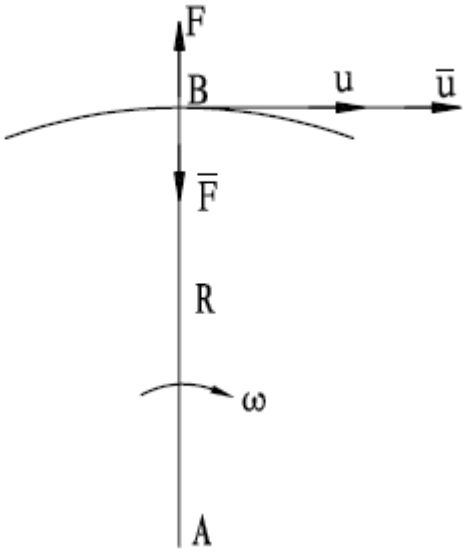

Fig.2. On body B F and $\overline{F}$ coexistence[2].

From Fig. 2, it follows

$$F+\overline{F}=0. \qquad (8)$$

From (6), (7) and (8) it follows

$$\frac{m}{M_B}=\frac{u^2}{c^2}. \qquad (9)$$

Body B increases mass m and centrifugal force is greater than gravitation force, then body B expands

outward. [5]

From (7) it follows Newtonian gravitation formula. The m is proportional to body A mass M_A, in (9) m is proportional to M_B, is inversely proportional to the distance R between body A and body B. It follows

$$m = k\frac{M_A M_B}{R}, \qquad (10)$$

where k is constant

Substituting (10) into (7) it follows the Newtonian gravitation formula [2-5]

$$\overline{F} = -G\frac{M_A M_B}{R^2}, \qquad (11)$$

where $G = kc^2 = 6.673\times10^{-8}\ \mathrm{cm}^3/\mathrm{g}\cdot\mathrm{sec}^2$ is gravitation constant.

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