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Masses and Repelling Forces

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Abstract: There is possible, in the stellar space to exist areas with very big electric potentials but with zero electric tension E. the bodies which exist inside these potentials act also as homonyms electric charges and repelled each other. Maybe they could acquire equivalent electric charges which will be able to give repelling forces larger than the attracting of masses.

Main subject

When electrically neutral bodies are found in an electric potential, they acquire the behavior of electric charge. When they are in a positive electric potential, they obtain the behavior of a negative charge and vice versa.

The electric energy W that anelementary electric charge q acquires when it is found in a potential $v_o$is:

$$W = V_o.q \qquad (1)$$

The energy W of the charge q has mass μwhich is:

$$\mu = w/c^2 = V_o.q/c^2 \qquad (2)$$

c→ velocity of the light in the vacuum

The mass μ gives to q one more weight **β** on top of the original weight **B** which the charge q had when it was out of the electric potential v_o. The weight **β** is the weight of the electric energy w of the charge q and it is given by the following formula:

$\boldsymbol{\beta} = \mu.\mathbf{g} = (V_o.q/c^2).\mathbf{g}$ (The symbols in bold show vectors) (3)

The **β**has electrical nature.It is i.e. the result of a small vertical component γ of the electrictension**E**. It is electrical for two reasons:

A)**β** is proportional to the charge q

B)with**β** independent of the electric tension **E,**this **β**presents turning (rot**β**≠0). But this is opposite to the conservation of energy.

Well, weight **β** should be the result of a small vertical component γ of the electric tension. Gravity reduces the original electric potential in the same way it reduces any other form of energy. This vertical decrease of the potential gives another small vertical component γ to the electric tension**E**. Theγ gives to the electric charge q the weight **β** of its electric energy. The final tension $E_g$arises from the slope (-grad) of anumerical electric potential V_g. The turn (rot) of the slope (grad) is always zero and thus the turn of E_g is also zero. The component γ of the final tension$E_g$is given by the following formula:

$$\gamma = \beta/q = (V_o/c^2).\mathbf{g} \qquad (4)$$

Every body small or big creates a gravity **g** around it, which is analogous to its mass and with direction to the body. The flow of **g**is incoming to the body. The electric tensionγ has the same direction with **g**, as we can see in equation (4), so it has a flow around the masses that are found in the electric potential. There is incoming flow around masses in a positive electric potential and outgoing flow around masses which are in a negative electric potential. So, these masses behave as electric charges.

If a spherical mass M with a ray R remains in a positive electric potential V, it will receive from γ incoming electric flow Φ which, according to equation (4), is in S.I units:

$$\Phi = 4\pi R^2\gamma = 4\pi R^2 (V_o/c^2)g = 4\pi R^2(V_o/c^2)[GM/R^2] \rightarrow$$

$$\rightarrow \Phi = -[4\pi G/c^2].M.V_o$$

G→constant of universal gravitation in S.I

The previous mass is equivalentto a negative electric chargeq_m which is in S.I units:

$$q_m = \varepsilon_o.\Phi \rightarrow q_m = -[4\pi\varepsilon_o G/c^2].M.V_o \qquad (5)$$

ε_o→ permittivity of the vacuum

There is a powerful electric field around the Earth which is created in the atmosphere by the weather phenomena, so all the mass of the Earth is in a negative electric potential of thousands of volt. This potential makes the Earth's mass behave like a small positive electric charge $q_\Gamma$which according to the equation (5) will be:

$$q_\Gamma = [4\pi\varepsilon_o G/c^2].M_\Gamma.V_\Gamma (6)$$

The result of this bracketat equation (6) gives:

$[4\pi\varepsilon_o G/c^2] \approx 0,8.10^{-37}$ $Cb^2. s^2/(kgr^2.m^2) = 0,8.10^{-37} Cb/(volt. kgr)$

With earths mass now $M_\Gamma \approx 6.10^{24}$ kgr and earth's electric potential $V_\Gamma \approx 3.10^5$volt, the equivalent charge of the earth is:

$$q_\Gamma = 14.10^{-37}.10^{24}.10^5 \approx 1,4.10^{-7}\ Cb \rightarrow q_\Gamma \approx +0,14\ \mu\ Cb \qquad (7)$$

The same amount of an equal negative charge appears simultaneously in the atmosphere as well. These equal but opposite electric charges neutralize a small part of the charges which create the electric field of the atmosphere and they reduce this field a little. Inside the Earth the electric tension E is still zero. The equal positive charge q_Γ which exists init, is neutralized by an extra amount of electrons. Inside the Earth the electrons are a bit more than the protons.

There is possible in the stellar space to exist areas with very big electric potentials but with zero electric tension E. the bodies which exist inside these potentials act also as homonyms electric charges and repelled each other. Maybe they could acquireequivalent electric charges which will be able to give repelling forces larger than the attracting of masses.

The electric potentialV_N, which is necessary so the Coulomb force and the Newton force between two bodies can be neutralized, can be found with the equation (5)

$$F_C = F_N \rightarrow (1/4\pi\varepsilon_o).(q_1.q_2/r^2) = G.m_1.m_2 / r^2$$

q_1, q_2 →equivalent electric charges of the 2 bodies

m_1, m_2→the masses of the two bodies and r their distance

The replacement of the charges from the equation (5) gives:

$$F_C = F_N \rightarrow (1/4\pi\varepsilon_o).[4\pi\varepsilon_o\, G/c^2]^2.m_1.m_2.(V_N)^2/ r^2 = G.m_1.m_2/ r^2$$

$$\rightarrow (V_N)^2 = c^4/(4\pi\varepsilon_o.G) \rightarrow (V_N)^2 = 81.10^{32}.9.10^9/(6, 67.10^{-11}) \rightarrow$$

$$\rightarrow (V_N)^2 \approx 109.10^{52} \rightarrow V_N \approx 10^{27} \text{ volt} \qquad (8)$$

Conclusion

In common neutron stars have been calculated that there are electric potentialsabout 10^{18}volt. So, it is possible, during the creation of the universe, there have been areas with potentials larger that the crucial potential of 10^{27} volt and they can even exist today.In these areas the bodies are not attracted to, but they are repelledeach other and driven away.

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