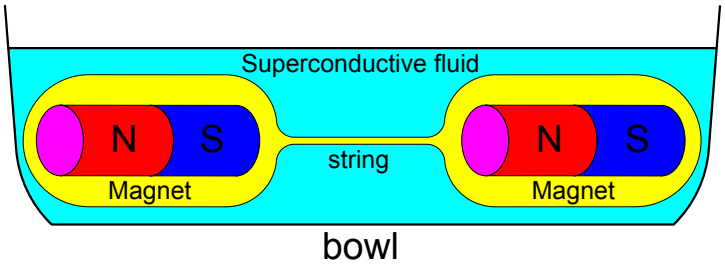
STRING HYPOTHESIS

Although strings' theory is very strange, it is not a complete fiction: first string ever is noticed when two permanent magnets are put into the superconductive fluid – they had obtained interaction trough thin neck with force that did not depend on distance:

Fig. 1



However, after some distance is reached, the string is cut, force disappeared and it is happening whenever the energy involved to increasing the mutual distance becomes equal to the energy stored in magnetic fields of magnets that interact. SQUID measures quantity of h/(2·e) that might be connected to measuring medium or either to strings themselves.

The strings are spontaneously spreading to the areas with suitable targets to be attached on. This predicts that distribution of electric and gravitational field cannot be necessary spherically symmetrical, and that directly involves "Act To Distance" theory. Operation of electric transformer obtained by the theory yields perfect correlation between primarily and secondarily coils, cohesive forces in galaxies are correct and no dark mater is needed, etc. These can be explained by non-uniform distribution of the fields from punctual sources. It can also explain why magnetic field is strictly localized in the closed magnetic circuit, although it is produced by charges in motion and consequently should spread all around.

String theory defines potential as number of strings that a wire intersects per time unit:

$$U = \frac{dN_{\vec{B}}}{dt} \tag{1}$$

Magnetic field is defined as concentration of strings on the surface:

$$\vec{B} = \frac{dN_{\vec{B}}}{d\vec{S}} \tag{2}$$

If we accept M hypothesis, than increase of magnitude of magnetic field is caused by increasing of concentration of magnetic strings in the particular area. We should also assume that magnetic strings cannot appear nor vanish. Than the increasing of concentration of magnetic strings can be achieved by crossing the strings trough the electric contour:

$$N = N_0 + \int_0^t \oint_\ell \frac{dN}{d\vec{S}} \cdot \left(d\vec{\ell} \times \vec{v}\right) \cdot dt \tag{3}$$

$$\Rightarrow$$

$$\frac{dN}{dt} = \iint_S \vec{\nabla} \times \left(\vec{v} \times \frac{dN}{d\vec{S}} \right) \cdot d\vec{S} \tag{4}$$

$$\Rightarrow$$

$$\frac{d^2N}{dt \cdot d\vec{S}} = \vec{\nabla} \times \left(\vec{v} \times \frac{dN}{d\vec{S}} \right) \tag{5}$$

Above formula is general string equation. This is also general 2D continuity equation. If we replace (2) into (5) we obtain formula for the magnetic field acting to a plane $\hat{n}$ collinear with the field we have following continuum equation:

$$\frac{d\vec{B}}{dt} = \vec{\nabla} \times \left(\vec{v} \times \vec{B} \right) \tag{6}$$

We can generalize above equation to all physical persistent fields with origin in non-decaying physical poles and thus to gravity field too, so within M hypothesis the next equation is valid too:

$$\frac{d\vec{G}}{dt} = \vec{\nabla} \times \left(\vec{v} \times \vec{G} \right) \tag{7}$$

Thus we can write equation of continuum for the magnetic field:

$$U = \frac{dN}{dt} = \frac{d}{dt} \int_S \vec{B} \cdot d\vec{S} = \oint_\ell \vec{E} \cdot d\vec{\ell} \tag{8}$$

$$\Rightarrow$$

$$\vec{\nabla} \times \vec{E} = \frac{d\vec{B}}{dt} \tag{9}$$

We can notice that Maxwell equations are just equation of continuity in E^2 space.

Let we start from basic equation of Coulomb field:

$$\vec{E} = \frac{Q}{4 \cdot \pi \cdot \vec{r}^2 \cdot \varepsilon} \cdot \hat{r} \tag{10}$$

Above equation can be rearranged on the following way:

$$\vec{E} = \frac{1}{\varepsilon} \cdot \frac{Q}{\vec{S}} = \frac{1}{\varepsilon} \cdot \frac{dQ}{d\vec{S}} \tag{11}$$

String definition of electric field is:

$$\vec{E} = \frac{dN_{\vec{E}}}{d\vec{S}} \tag{12}$$

$\Rightarrow$

$$N_{\vec{E}} = \oint_S \vec{E} \cdot d\vec{S} \tag{13}$$

Also on plane n̂ penetrated by the field is:

$$\frac{d\vec{E}}{dt} = \vec{\nabla} \times \left(\vec{v} \times \vec{E} \right) \tag{14}$$

Whereas:

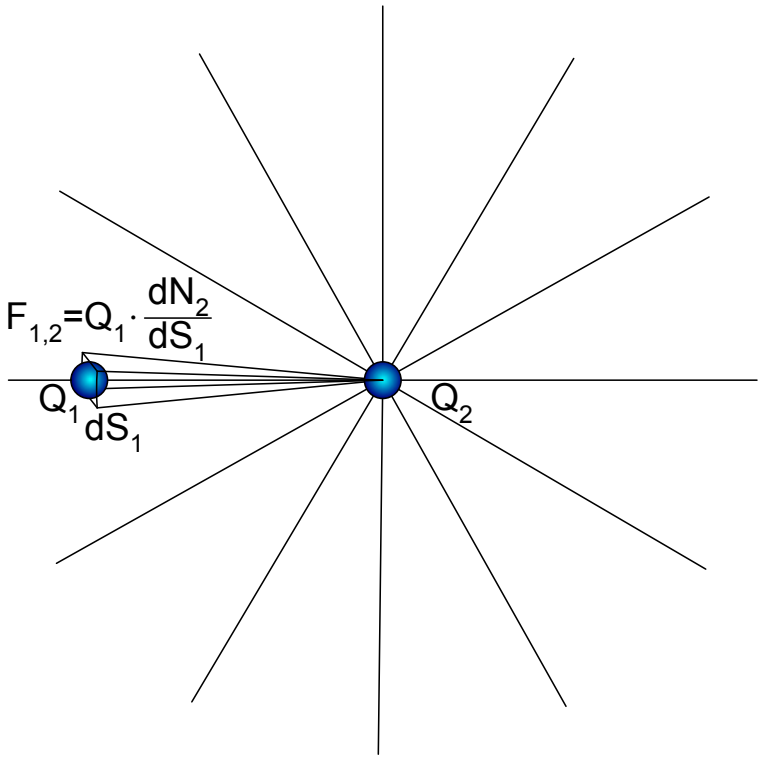
$$N_{\vec{E}} = \frac{Q}{\varepsilon} = \oint_S \vec{E} \cdot d\vec{S} \tag{15}$$

String's force is defined as:

$$\vec{F}_{1,2} = Q_1 \cdot \frac{dN_2}{d\vec{S}_1} \tag{16}$$

This is explained on the following picture:

Fig. 2



Anent:

$$\vec{F}_{2,1} = Q_2 \cdot \frac{dN_1}{d\vec{S}_2} \tag{17}$$

String theory predicts that distribution of gravity force between stars and planets is not spherical, but more elliptical, squeezed in the area of galaxy's mass distribution. In such case force does not decrease with r^2, but rather with the r^k as

Newton predicted, i.e. most strings are spent to obtain interaction with the neighbors masses and just few ones with other galaxies.

According (15) we can derive the Gauss formula for N dimensional Euclidian space. Surface of n dimensional sphere in E^n space is:

$$S_n = \frac{2 \cdot \pi^{\frac{n}{2}} \cdot r^{n-1}}{\Gamma\left(\frac{n}{2}\right)} = \frac{n \cdot \pi^{\frac{n}{2}} \cdot r^{n-1}}{\left(\frac{n}{2}\right)!} \tag{18}$$

Whereas r is radius of the hyper sphere and n is number of dimensions in Euclidian space E^n.

Force acting between two charges in E^n is:

$$\vec{F}_{1,2} = \frac{Q_1 \cdot Q_2}{\varepsilon \cdot r^{n-1}} \cdot \frac{\left(\frac{n}{2}-1\right)!}{2 \cdot \pi^{\frac{n}{2}}} \cdot \hat{r}_{1,2} \tag{19}$$

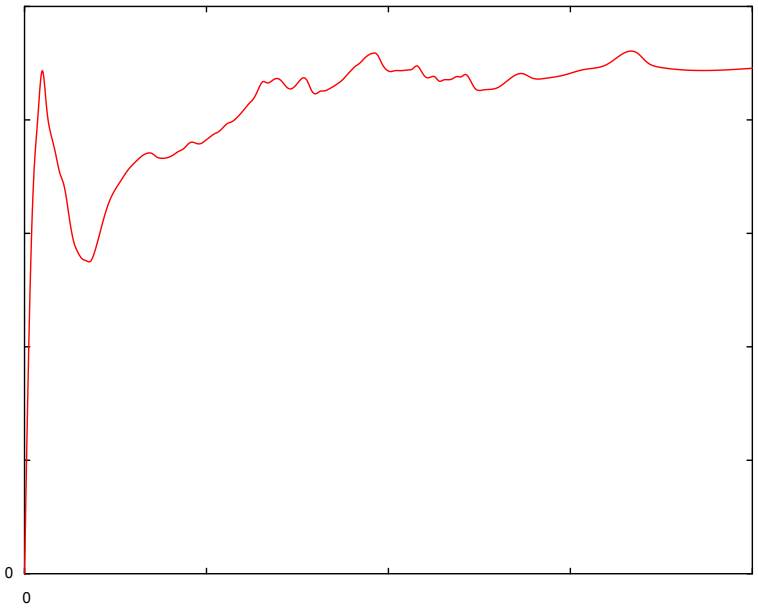
Force acting between two masses in E^n is:

$$\vec{F}_{1,2} = \frac{4 \cdot \pi \cdot \gamma \cdot m_1 \cdot m_2}{r^{n-1}} \cdot \frac{\left(\frac{n}{2}\right)!}{n \cdot \pi^{\frac{n}{2}}} \cdot \hat{r}_{1,2} \tag{20}$$

For adjacent charges or masses we have that n is 3, but for distant masses or charges it might be close to 2 or even 1 in empty space! Simply, strings tend to establish connection with neighboring charges or masses, and if there is nothing in the vicinity they will return and establish a connection with itself thus creating a new field.

Graph of velocity in galaxy is shown on the following picture:

Fig. 3

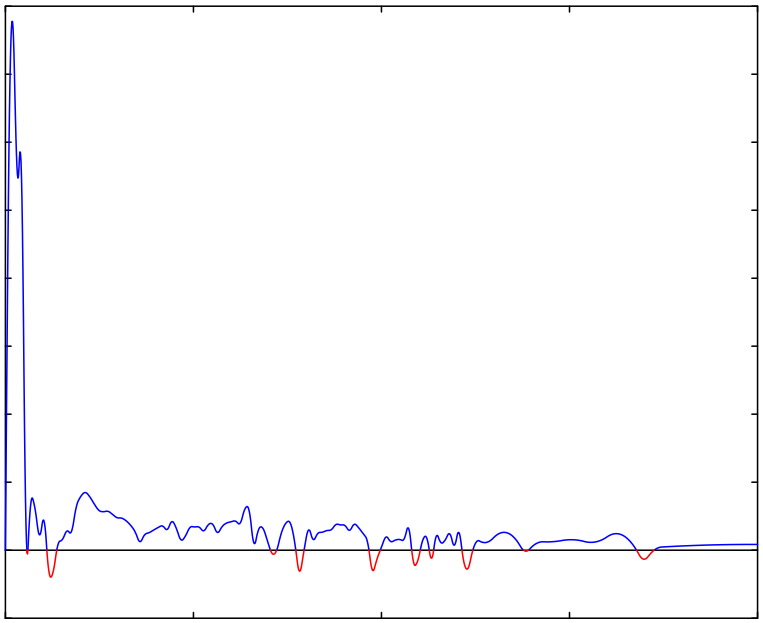


Following formula defines connection between density and velocity:

$$\frac{dm}{dS} = \frac{1}{2 \cdot \pi \cdot r \cdot \gamma} \cdot \left(v^2 + 2 \cdot r \cdot v \cdot \frac{dv}{dr} \right) \tag{21}$$

Graph of density over radius of galaxy is derived from above graphic:

Fig. 4



This graph contains red areas of negative masses, which is impossible. There are two solutions for the situations:

1. Galaxy is young far away from its stable form.
2. There are string interaction between bodies in the galaxy and force decreases with degree different than 2.

We could suppose that solution two is valid one. If we suppose that gravitational force could be written in the following form:

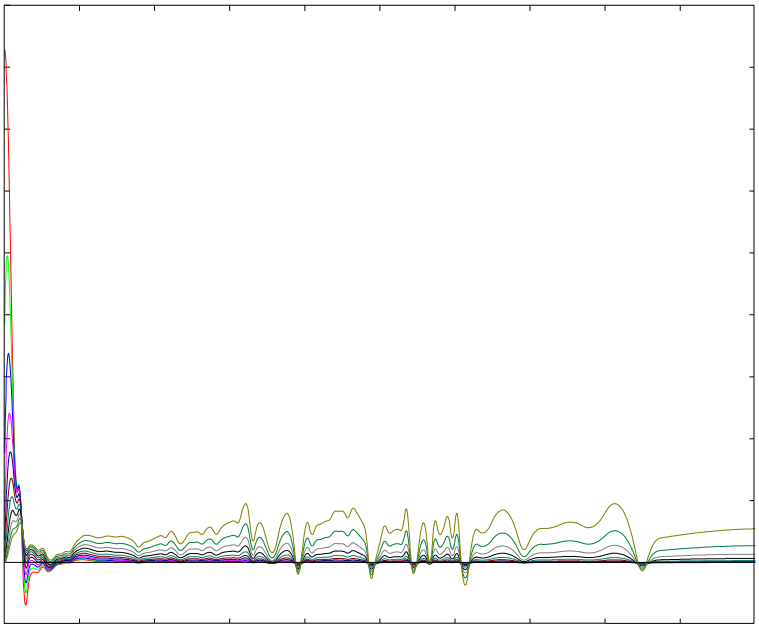
$$F_{1,2} = \gamma \cdot \frac{m_1 \cdot m_2}{r^k} \tag{22}$$

Where k is not necessarily equal to two. Then we have:

$$\frac{dm}{dS} = \frac{1}{2 \cdot \pi \cdot \gamma} \cdot \left((k-1) \cdot r^{k-3} \cdot v^2 + 2 \cdot v \cdot r^{k-2} \cdot \frac{dv}{dr} \right) \tag{23}$$

Following graphic shows curve of mass density for various values of parameter $k \in [1,3]$:

Fig. 5



It is noticeable that for k = 1 there is no negative mass and it is a case of E^2 distribution of strings.

Recent theoretical research done by Thierrin [1] showed that particles in the atom's core have super-luminary velocity:

$$v = \sqrt{2} \cdot c \tag{24}$$

This presumption led to correct formula for neutron's mass:

$$m_n = m_p + m_e \cdot \left(2 - \frac{\alpha^2}{2}\right) \tag{25}$$

This means that empty space, i.e. vacuum behaves to nuclear forces like the superconductive fluid behaves to magnetic field. Consequently nuclear interactions must be string-ones only.

The string hypothesis is based on M hypothesis because in the case magnetic and electric fields must have their own velocities equal to velocities of their strings.
3D continuity equation is deriving on the following way:

$$N = N_0 + \int_0^t \left(\oiint_S \vec{J} \cdot d\vec{S} \right) \cdot dt \tag{26}$$

$\Rightarrow$

$$\frac{dN}{dt} = \oiint_S \vec{J} \cdot d\vec{S} \tag{27}$$

After Gauss-Ostrogradsky theorem is applied, we obtain:

$$\frac{dN}{dt} = \iiint_V \left(\vec{\nabla}\vec{J}\right) \cdot dV \tag{28}$$

$\Rightarrow$

$$\frac{d\rho}{dt} = \vec{\nabla}\vec{J} \tag{29}$$

We have following equation too:

$$\vec{J} = \frac{dN}{d\vec{S}} = \rho \cdot \vec{v} \tag{30}$$

By replacement of (30) in (29) we finally come to formula of 3D continuity equations for dots volume's concentration:

$$\frac{d\rho}{dt} = \vec{\nabla}\left(\rho \cdot \vec{v}\right) \tag{31}$$

When (30) is replaced in (29) we finally have formula of 3D continuity equation for area's concentration of penetrating points between surface and moving strings:

$$\frac{d\vec{\rho}}{dt} = \vec{\nabla} \times \left(\vec{v} \times \vec{\rho}\right) \tag{32}$$

Equation (31) is equivalent to equation (32), both based on presumption that concentration elements cannot appear nor vanish.
If we accept that following equation is valid:

$$\vec{E} = \vec{v} \times \vec{B} \tag{33}$$

Then string theory offers following equation for general connection between magnetic and electric field:

$$\vec{\nabla} \times \vec{E} = \frac{d\vec{B}}{dt} \tag{34}$$

There is a total time differentiation contrary to appropriate Maxwell equation. At the moment this string hypothesis is pure speculation. Although it is a mystical theory with very difficult quantifications of forces acting between fields' sources, it magically fills all the black holes in present theories.

References:

1. Gabriel Thierrin, Journal of Theoretics, Vol. 5-3 (2003)
2. F.T. Trouton and H.R. Noble, Proc. Roy. Soc 72, 132, (1903) and Phil Trans, A 2-167, (1903).

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