The Alpha Torque and the Charged Field

Zhiliang Cao, Henry Cao

williamcao12252000@yahoo.com, henry.gu.cao@gmail.com

June 28, 2010

Abstract

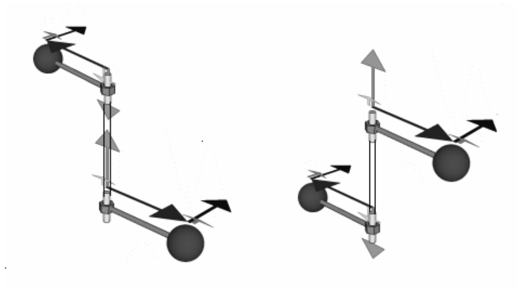
The space itself is not a true void. In fact, space has energy in it. The energies and forces have a simple movement. This very movement dominates every aspect of physical existence. Nothing can exist without it. The movement is called the Torque. Torque movements can explain why there are electronic fields and magnetic fields. The torque theory can make it easier to understand why there are charged fields.

KEYWORDS: Spacetime, Relativity, Astronomy, Electronic Fields, Magnetic Fields

TABLE OF CONTENTS

1 Torque

The following picture illustrates the torque forces in classic physics.

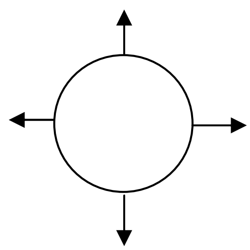


The rods in the center bear the torque forces. The balls at the top and bottom generate the torque forces. The diagram on the left is a tightening torque, while the one on the right is a loosening torque. The two torque forces are twisting in different directions. “Tightening” and “loosening” are the terms used to label the two different directions of torques. The torque movements appear in one’s everyday life. Take for example screwing a lid onto a jar. That is a “tightening” torque. When you open a lid, a loosening torque is taking place.

2 Charged Field

The charged particle has an internal torque and an external torque. The external torque is the source of the charged field.

The external torque field of an electron has a loosening torque.



The electronic field is a torque field. Imagine that there is a sphere surrounding the charge. All of the torque forces remain constant regardless of the size of the sphere.

$$\oiint E dS = e$$

Where:

E is the charged force on the sphere.

S is the area of the sphere.

e is the total charge.

Assume that there is a sphere with a radius of r and a constant torque of E. We have:

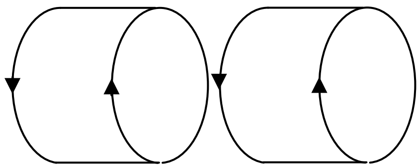
$$4\pi r^2 E = e$$

or:

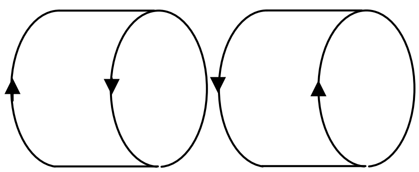
$$E = \frac{e}{4\pi r^2}$$

3 Torque Interaction and Electronic Field

When there are two positively charged particles, you have:



The torque movements between two charges cancel out, but the farther ends of the torque movements are enhanced. As a result, the two charges move away.



When there is one positive torque and one negative torque, the movements between the two particles are enhanced. The two particles will attract each other.

The force of one of the particles is proportional to the torque strength times the particle's charge.

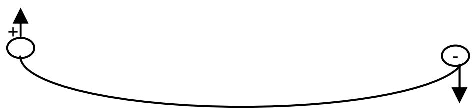
$$F = A\frac{e_1}{4\pi r^2}e_2 = A\frac{e_1 e_2}{4\pi r^2} = \frac{e_1 e_2}{4\pi\varepsilon_0 r^2}$$

The above equation is the same as Coulomb's Law.

4 Magnetic Field

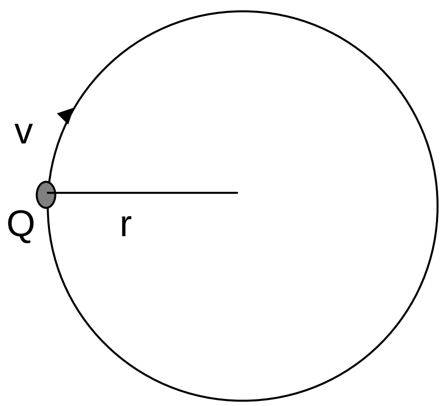
4.1 Charged Particle Circular Movement

When the charged particles move, the electronic force vectors will start to twist. You can consider that the twist is the rotational torque (charge) line. The twist motion produces the magnetic field.



The density of the twisted line (assume that each line has same strength) and the speed of the twist determines the strength of the magnetic field. If we consider both factors, then the more electric current there is, the larger the magnetic field.

How can the magnetic field be quantified? Assume that there is a positively charged unit going in a circular motion as follows:



v is the speed

Q is the strength of the charge

r is the radius

ω is the angular speed

B is the strength of the magnetic field

The strength of the magnetic field is:

B=Qv/r

Or

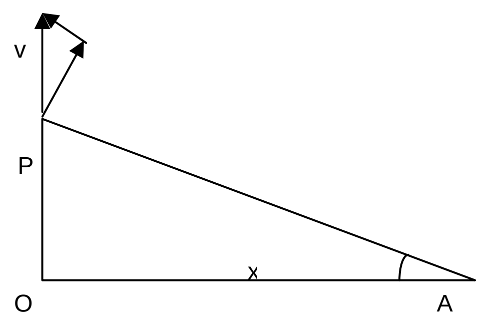
Br=Qv

Or

$$B = Q\omega$$

4.2 Ampère's circuital law

Now we use the torque theory to find Ampère's circuital law equation.



In the above diagram, the magnetic field torques along line x at point A, which is created by the charge at point P. The equation is:

$$Qv(1/\sqrt{x^2+y^2})(1/\sqrt{x^2+y^2}) = Qv/(x^2+y^2)$$

Assume that the wire has infinite length. A unit has a charge of Q_0 and v=1/t. The magnetic field will be:

$$\int_{-\infty}^{+\infty} \frac{Q_0 v}{x^2+y^2} dy = \frac{1}{x}\int_{-\infty}^{+\infty} \frac{Q_0 v}{1+\left(\frac{y}{x}\right)^2} d\left(\frac{y}{x}\right)$$

Assume y/x =tan(t):

$$\frac{1}{x}\int_{-\pi/2}^{+\pi/2} \frac{Q_0 v}{1+(\tan(t))^2} d(\tan(t)) = \frac{1}{x}\int_{-\pi/2}^{+\pi/2} Q_0 v dt = \pi Q_0 v$$

Since v=1/t and the electric current I in amperes can be calculated with the following equation:

I = Q/t

We have:

$$B = \pi Q_0 v / x = (\pi Q_0 / x) / t = \pi I / x$$

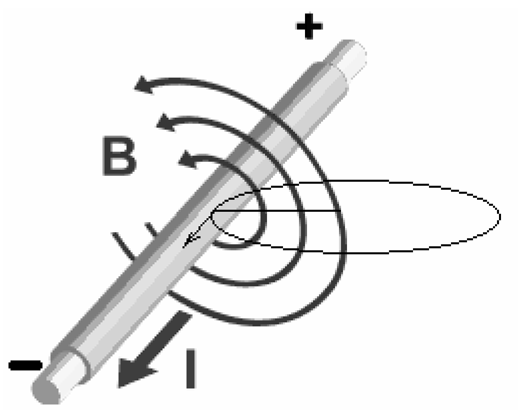
$$or$$

$$2\pi x B = \pi^2 I$$

The above equation can generalized as:

$$\oint B dl = \mu_0 \oiint_s J_f dS$$

The above equation is the Ampère's circuital law.



The above picture demonstrates Ampère's circuital law.