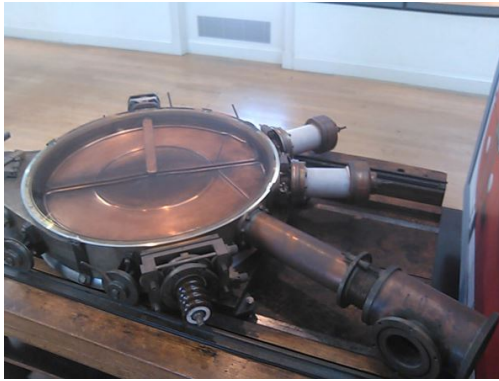# Jean de Climont

The motion of electrons
is not
the cause
of magnetic field

This report is taken from the book:
Fluid Mechanics and Physics
of the same author.

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1. Presentation

The magnetic field of an electron beam is canceled when the beam is deviated by 90°. This occurs in the Cyclotron.

It is therefore that the magnetic field can not result from the motion of electrons.

2. Cyclotron

Scientists have long known that the electron, proton or ion beam of cyclotrons do not have any magnetic field although they travel at speeds of tens of thousands of kilometer per second.

These elements are rotated afer emitted by the gun. Their intrinsic magnetic fields remain aligned, if it is the case, in the direction given by the gun, but as these elements rotate, the beam itself no longer has a measurable magnetic field.

Scientists said that the electron beam induces currents in the metallic part of the cyclotron surrounding the beam. These currents would produce magnetic fields that would cancel the beam magnetic field. The problem is that this explanation has never been confirmed experimentally.

The best now would be to check that the magnetic field of the electron beam is cancelled even when the surrounding part of the beam are not metallic but in glass. This would be the case of a CRT made of a tube in glass bended at 90° in its middle part as proposed for the Climont's experiment.
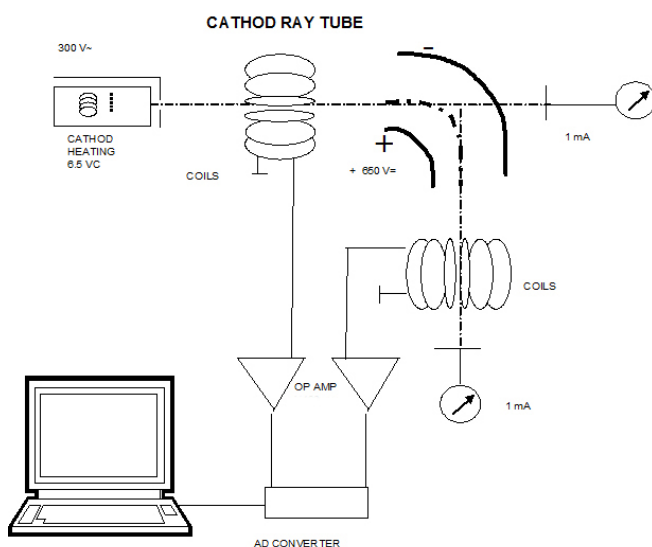
The magnetic field would be measured before and after the bend. In this experiment there could not be any induced magnetic field in the glass device. The author of this experiment try to use a CRT manufactured in the former DDR fifty years ago. The beam intensity should be about 0.56 milliAmps allowing measuring the

magnetic field with coils provided the anode voltage is pulsated.

Unfortunately these CRT are too old and the cathode don't work any more. Other CRT available on the market including old TV gns have electron beam intensity lower than some microamps not detectable with simple coils and they need a power supply up to ten thousands volts as a minimum. They can only be used in laboratory. Moreover the induced voltage would be very low.
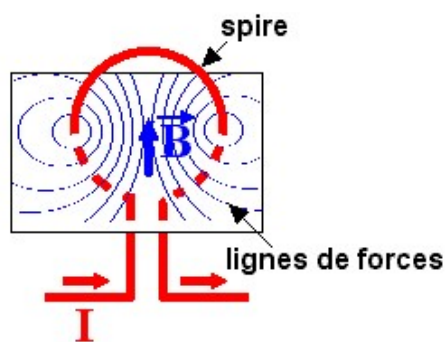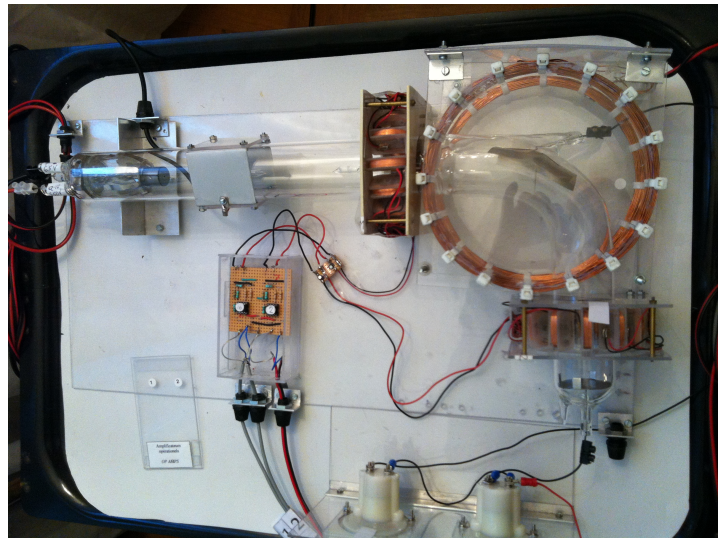
In the 1950s, scientists dreamed of producing electricity without alternator by making a ionized fluid flowing in a circular circuit at high speed: the magnetohydrodynamics. It is the equivalent of a loop crossed by a current. But this loop does not have any magnetic field. Ionized atoms motion, that is to say electric charges motion, doesn't produce any magnetic field.

3. Conductors

There is another way to verify in a simple way that the motion of electrons can not be the cause of the magnetic field of electric currents.
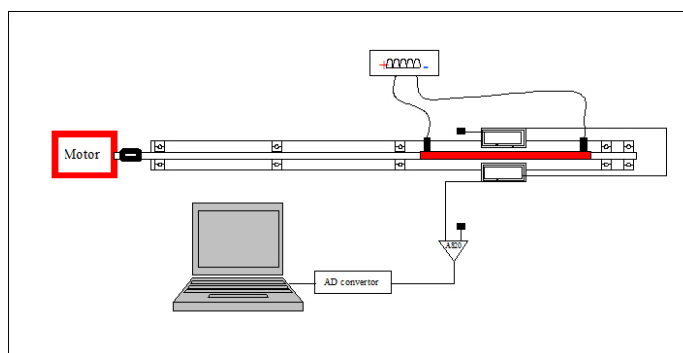

The magnetic field of a conductor, supplied with a current of 0 to 2.5 Amps, rotating at 260 revolutions per second, is measured by induction coils.

The field in the rotating conductor at nearly 260 revolutions per second is

about ten times higher than the field of an identical current passing through the stationary conductor.
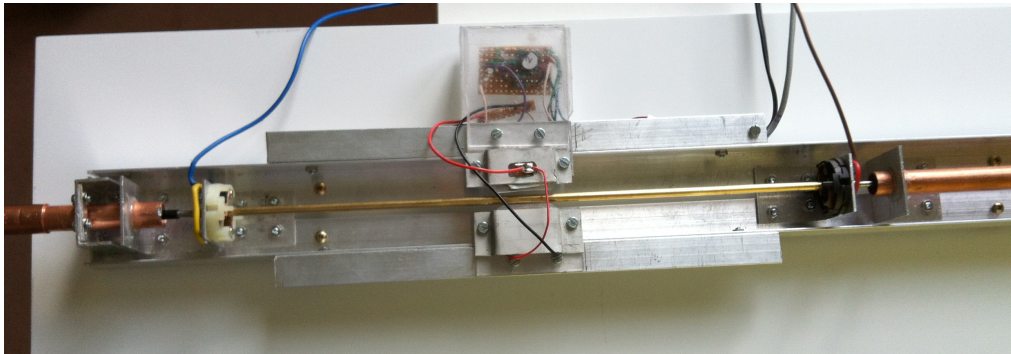
This experiment is very similar to the Rowland's disk experiment. In 1875, Henry Rowland discovered that a rotating electrically charged disc has a magnetic field. Rowland used two parallel discs and observed the move of very thin needles.

Sensor output after amplification for pulsated currents in the rotating copper tube 260 Hz (blue curve)
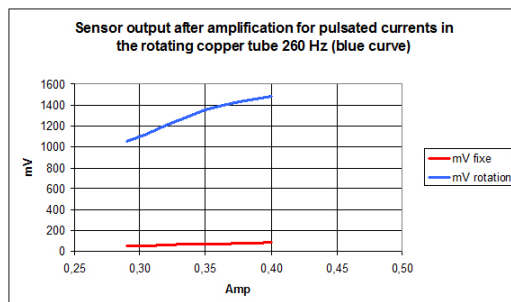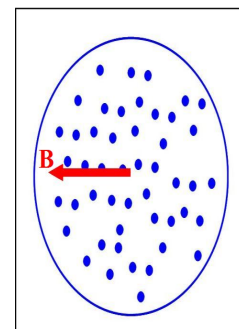
The very sharp increase of the rotating conductor magnetic field is exactly the same phenomenon. But the measurement of the magnetic field with coils gives an additional information. Of course the current in the conductor shall be pulsated to induce a voltage in the coils. The advantage of the use of coils is to give an indication on the structure of the magnetic field because the field lines shall cross the coils.

According to the position of the coils in the plane of the conductor, the magnetic field shall have a rotational structure with its axe parallel to the coils so that the field lines are perpendicular to the plane of the coils and cross them.
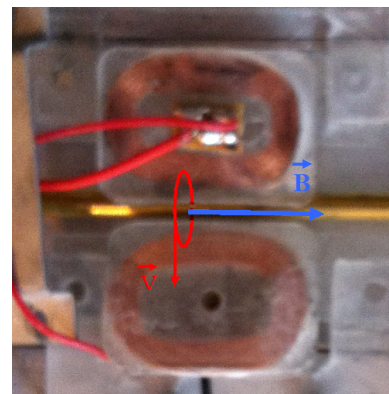
This is of course the structure of the magnetic field of a conductor according to Maxwell-Ampère equation.

But this is not the case of the helical current produced in the conductor by the rotation of electron around its axis. The field lines of such an helical current are

parallel to the conductor. The coils in the plane of the conductor cannot detect this kind of fields. The lines of such magnetic fields don't cross the coils.

The very sharp increase of the rotating conductor magnetic field is a Rowland's effect, but this effect cannot result of the electrons helical motion. It can only be a result of the intrinsic magnetic field of electron.

This is a precession phenomenon. This phenomenon is the cause of the very sharp increase of the rotating conductor magnetic field as is is the cause of the Rowland effect.

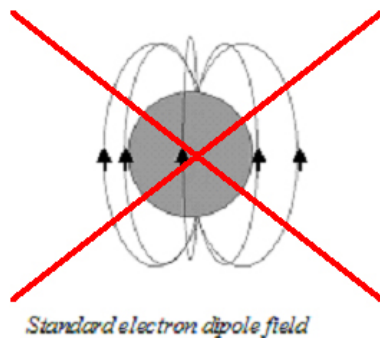# 4. Structure of the magnetic field of electrons

The effect of electrical current on magnets was rediscovered by Hans Christian Ørsted in 1820. This effect was first discovered by Gian Domenico Romagnosi in 1802.

The compass needle is deviated by the electrical current in the wire.

This experiment, then the discovery of the electron in the twentieth century is at the origin of the idea that the magnetic field results from the motion of electrons in the conductors and therefore also in the electron beams.

But as we have just seen, the motion of the electrons can in no way be the cause of the magnetic fields. It can only result from the intrinsic magnetic field of the electrons themselves.

Unfortunately, there is another problem now. The intrinsic magnetic field of electrons is assumed to have a dipole structure. This is impossible according to the rotating magnetic field experiment, because the field lines of such a field would cross the coils in opposite directions and would cancel eah other or worst they would not cross the coils at all.

Standard electron dipole field

It is therefore that the field of electrons can not have a dipole structure as postulated by quantum mechanics. The standard electron model of quantum mechanics is false.

The magnetic field of the electrons has a rotational structure. It was the structure of the
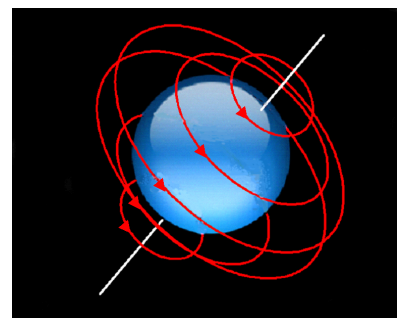
magnetic field erroneously attributed to electric currents and electrons beam. It is also necessary that the magnetic field of the electrons is correctly oriented.

Powering a conductor changes the electronic arrangement of the conductor and gives the magnetic field of the electrons an orientation collinear to the conductor. This orientation is conserved throughout the conductor because the electric field always remains oriented in the axis of the conductor whatever the shape given to it.

The electrons extracted from the cathode of the electron gun by the anode voltage keep this orientation even after a deviation so that the beam has no more detectable magnetic field after a 90° bend as proposed by the Climont's experiment.

The rotational magnetic field of the electrons is the single cause of the magnetic field of electrical currents and of the electron beams.
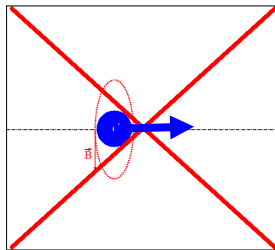
The motion of the electrons is not the cause of the magnetic fields.
The speed of electrons plays no part in magnetic fields.

Moreover, the intrisic magnetic field of the electrons is strictly invariant in Galilean reference frame changes.

5. Maxwell

$$\nabla \times \vec{B} = \mu_0 \vec{J} + \mu_0 \varepsilon_0 \frac{\partial \vec{E}}{\partial t} \quad \text{Maxwell-Ampère}$$

A consequence of the rotating conductor experiment is that the Maxwell-Ampere equation is false.

The magnetic field of an electric current is the product of the mean vectorial value of the intrinsic magnetic fields of the electrons by the number of these electrons present in the conductor at a given point and at a given time. Its value is therefore proportional to the intensity of the electric current, but this intensity is not itself the cause of the magnetic field.

Scholarly calculations attribute a speed of a few centimeters per second to the electrons in conductors, but it is astonishing that the speed of electrons has never been measured. The whole of Maxwell's electromagnetic theory is based upon a phenomenon that has never been verified experimentally.

Magnetic fields result exclusively from the intrinsic magnetic field of electric charges.

When the transverse surface of the conducting wire changes, the electric field is deformed. As a result, the mean vectorial value of the intrinsic magnetic fields of the electrons has a component perpendicular to the axis of the conductor.

It is absolutely obvious that when there is no longer any voltage in the conductor, the transverse magnetic field disappears at the same time as the longitudinal field. It is absolutely absurd to keep only the transverse field. The suppression of the displacement current invented by Maxwell, to solve a mathematical divergence problem has another consequence. The Maxwell-Hertz equation makes no sense.

$$\overrightarrow{rot}\ \overrightarrow{B} = \varepsilon\,\mu\,\frac{\partial \overrightarrow{E}}{\partial t}$$

The magnetic fields which occur during charging of the capacitors results from the orientation of the electron magnetic field by the electric field. When the capacitor is charged, there is no electric field neither in the conductor nor in the plates, but only between the plates. The orientation of the intrinsic magnetic field of the electrons in the negative plate then becomes stochastic again.

If the waves of Space result, in particular, from the electrons vibrations and if they have an effect on the electrons, there is no evidence they are electromagnetic in nature by themselves.

6. The relativist illusion

The electromagnetic nature of light is a pure postulate of Maxwell.

He showed that the waves associated with oscillations of electric and magnetic fields propagate in a vacuum at the speed of light.

Maxwell immediately thought that light is therefore electromagnetic in itself. The aim of the positivists, and therefore of Maxwell, was to find mathematical equations for all the phenomena of Nature.

In 1887 Hertz discovered the waves emitted by an electric circuit. These waves propagate at the speed of light. He thus confirmed Maxwell's theory.

The problem seemed to be solved.

But there was a another serious problem. The Maxwell-Hertz equation is based on the belief that magnetic fields result from the motion of electrons. This equation is therefore not invariant in a Galilean reference frame change.

But as we have just seen, this is not the case. Speed plays no part. The problem of relativity does not therefore exist at all.

However, some time before relativity could give the illusion of solving a problem that did not exist, the same basic relations, the Lorentz formulas, made it possible to explain the apparent impossibility of measuring the displacement of the Earth around the Sun by the famous Michelson experiment. It was a very convincing coincidence, it must be admitted.

Nevertheless, speeds over 9 km per second were measured. The measures would have been influenced by the temperature.
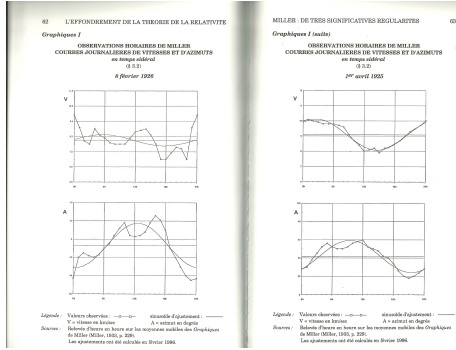
But professor Allais found a correlation to the respective positions of the Earth, the Sun and the Moon. It is not thus due to the temperature. Of course, it is not the speed of the Earth around the Sun at 30 km per second, but it is a uniform motion. It is totally against the relativity theory. It has to be explain one day.

Unfortunately for the relativists, by renouncing the absurd equations of Maxwell, everything takes another dimension.

By renouncing to postulate that the light would be electromagnetic in itself, it is possible to come back to a medium in space carrying waves such as light. the aether.

So Descartes was right!

Gravitation and light are carried by the same medium.

This is the famous theory of whirlpools.
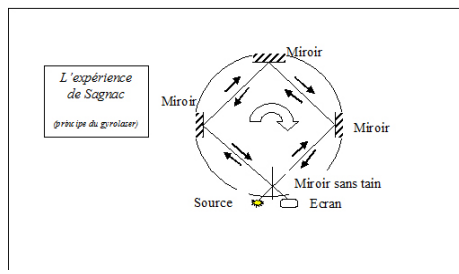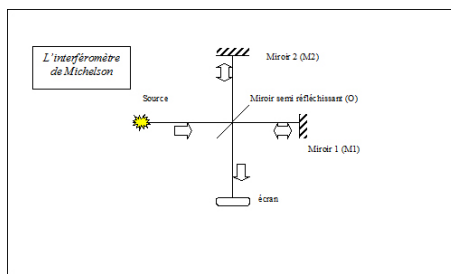
Before going into the detail of this theory, it should be recalled that Descartes' theory explains the Michelson and Sagnac experiments in a perfectly obvious way.

Most remarkable is that Descartes had foreseen the deviation of light by the sun.