THE “ROTATING CHAMBER” EXPERIMENT

Let’s assume, fig.1, that we have a sealed chamber **s**, which is rotating on an axis AB with constant angular velocity **ω** and radius **R** $(\mathbf{R} \perp \mathbf{AB})$.
Rotation is achieved by e.g. a rope or a metal rod, of a length **R**.
Inside the chamber is an observer **O**, who has no contact with the external environment.
In addition, axis AB is motionless in relation to an inertial reference system **S’** (observer **O’**).

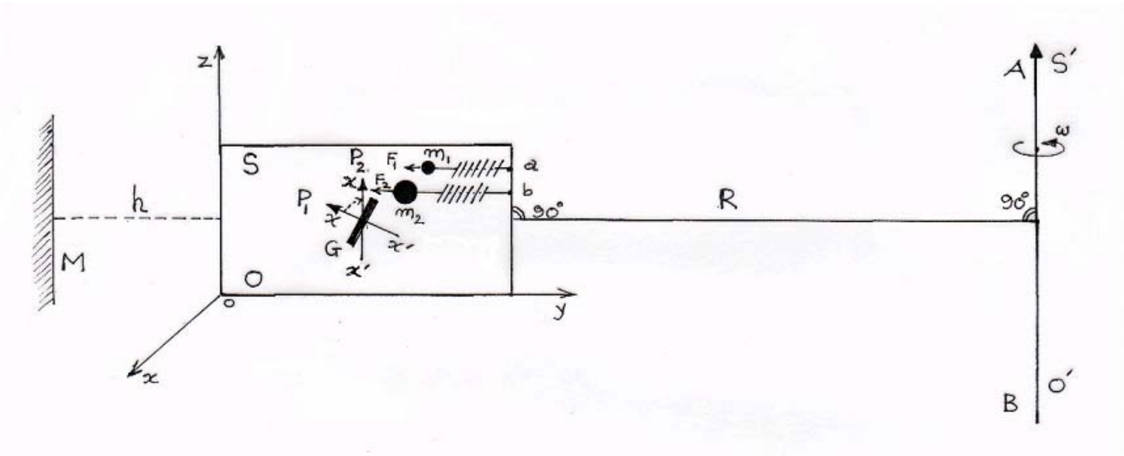

Fig.1

The problem that emerges from the above is as follows:

THE PROBLEM

The observer **O**, who is inside chamber **S** may prove, by conducting various experiments (e.g. Mechanics) within the chamber:
1. The kind of motion performed by the chamber **S**, and
2. Whether or not there is a mass M outside the chamber, which affects the various experiments conducted within the chamber.

THE ANSWER OF OBSERVER O

In order to answer the two questions (1) and (2) of the above problem, the observer **O**, who is inside chamber **S** (without any contact with the external environment), acts as follows:

a. Let’s assume that **o.xyz** is the reference system of chamber **S** of observer **O**.
The observer **O** activates a gyroscope **G**, which he places in a position within the chamber.
He immediately observes that axis **xx’** of the gyroscope **G** moves gradually away from position $\mathbf{P_1}$, where it was placed, and towards position $\mathbf{P_2}$, where it settles.
According to the data at hand, at position $\mathbf{P_2}$, the axis **xx’** of the gyroscope **G** is parallel to the axis of rotation **AB**.

b. Following that, the observer **O** places two springs (dynamometers) (a) and (b) on the walls of his chamber, to the ends of which are attached, respectively, masses $\mathbf{m_1}$ and $\mathbf{m_2}$ ($\mathbf{m_1} < \mathbf{m_2}$). He immediately observes that the force $\mathbf{F_1}$, shown by the dynamometer (a) is constant, which results in mass $\mathbf{m_1}$ remaining motionless on the same point $\mathbf{m_1 (x_1, y_1, z_1)}$ of the reference system **o.xyz** of chamber **S**.
He also observes that the force $\mathbf{F_2}$, shown by the dynamometer (b) is constant, which results in mass $\mathbf{m_2}$ remaining motionless at the same point $\mathbf{m_2 (x_2, y_2, z_2)}$ of the reference system o.xyz of chamber **S**.

c. Finally, observer **O** observes that the springs of dynamometers (a) and (b) (i.e. the vectors of forces $\mathbf{F_1}$ and F2) are always parallel to each other.

After the above experiments and observations (a), (b), and (c) made by observer **O**, he draws the following the conclusions:

A. From observation (a) he concludes that chamber **S** is moving along a curved trajectory and it is not possible for it to be on a straight trajectory, because in that case the axis **xx´** of the gyroscope would not move from position $\mathbf{P_1}$ to the final position $\mathbf{P_2}$, but would remain motionless at the original position $\mathbf{P_1}$, where it was placed.

B. From observations (a) and (b) he concludes that it is possible for a mass M to be outside the chamber, and for the chamber **S** to be motionless in relation to it, at a distance (height) of e.g. h. However (according to the observer **O**), this possibility is ruled out, because if that were the case, axis **xx´** of the gyroscope would remain motionless in its original position $\mathbf{P_1}$, where it was placed, rather than moving from $\mathbf{P_1}$ to the final position $\mathbf{P_2}$.
Therefore (the observer **O** concludes) there cannot be a mass M outside the chamber, affecting the outcome of his experiments.
Consequently, the force field within the chamber **S** is an **inertial force field**, and under no circumstances a **gravitational force field**.

After the observations (a), (b), and (c) and the conclusions (A) and (B) discussed above, observer **O** draws the final conclusion that:

CONCLUSION

I. The chamber **S** is in circular motion with a radius **R** and constant angular velocity $\boldsymbol{\omega}$ around an axis AB, which is motionless in relation to an inertial observer **O**'.
II. There is no mass M outside chamber **S** affecting the experiments conducted within chamber **S**.

Consequently the force field within the chamber **S** is an **inertial force field**, and under no circumstances a **gravitational force field**.

The above conclusions (I) and (II) of observer **O**, who is sealed inside the chamber **S** (without any contact with the external environment) are obviously the answers to questions (1) and (2) of our problem.

NOTE: Chamber **S** of the "Rotating Chamber" experiment is identical (e.g. in size) to the one used by Einstein in his well-known thought experiments in the Theory of Relativity (e.g. the elevator experiment, etc), in order to "prove" (as he claims) the equivalence between a body's inertial and gravitational mass, and the curvature of light, within gravitational fields. The only difference is that inside the chamber used by Einstein in his well-know thought experiments in the Theory of Relativity there are now a gyroscope **G**, two dynamometers (a) and (b), etc.

AN INTERESTING OBSERVATION

1. The observer **O**, by conducting experiments within the chamber **S using a known mass m and based on the Coriolis force phenomenon**, may calculate the radius **R** of the circular trajectory, the velocity **υ** at which it rotates, and the angular velocity **ω**, etc, of the chamber **S**.

2. The same logic applied to the "rotating chamber" experiment, may be applied to the "satellite" experiment, as follows:

The "satellite" experiment

An observer **O** (astronaut), who is sealed inside the chamber **S** of an artificial satellite, which is orbiting a body with a mass M (e.g. the Earth), on a circular orbit with a radius **R** and constant angular velocity **ω**, then:
(http://geocities.com/bugrep238.htm)
Through various experiments (e.g. Mechanics, similar to those used in the "rotating chamber" experiment), he may prove:
1. Which kind of motion is performed by the chamber **S**, and
2. Whether or not there is a mass M outside his chamber, which affects the various experiments he conducts within the chamber.

Specifically:
a. The satellite **cannot** be on a straight trajectory (performing either uniform or varied motion), and that is proven by the displacement of axis **xx'** of the gyroscope **G**, which is inside the satellite.
b. The satellite **cannot** be on a curved trajectory either, because in that case the masses $\mathbf{m_1}$ and $\mathbf{m_2}$, on account of the centrifugal force within the satellite, ought to move from their initial resting position, where they were placed.

Consequently, the only possibility that remains is that there is a mass M outside the satellite, which the satellite orbits in one of the following ways:
1. It draws an elliptical arc and eventually falls onto mass M.
2. It is in circular orbit.
3. It is in elliptical orbit.

4. It is in parabolic orbit.
5. It is in hyperbolic orbit.
Thus, through various experiments that the astronaut can perform within the satellite (like, e.g. experiments based on the Coriolis force, or by applying the “bright urchin” method – see the “Sealed chamber” in free fall experiment), the astronaut may establish the type of trajectory he is on, i.e. which of the above five options (1), (2), (3), (4), and (5) describes the motion performed by the satellite, and may also calculate the mass M, which is outside the satellite, and which it orbits.

EPILOGUE

As is well known, according to the Theory of Relativity and specifically the “equivalence principle”, the observer **O** cannot, under any circumstances and through no experiments that can be performed within the chamber **S**, answer the two questions (1) and (2) of our problem. Because, however, (as demonstrated above) those answers do exist and are provided by conclusions (I) and (II), that means that, once more, and based on the “rotating chamber” experiment, the Theory of Relativity is proven to be an erroneous theory of Physics.
In addition, the philosophy upon which the Theory of Relativity is based, **regarding the non-existence of privileged reference systems**, is also wrong, as demonstrated above, because: Privileged reference systems do exist in Nature and one of those is the Ether system, as described in Electrogravitational Theory.

FINAL CONCLUSION
EINSTEIN'S TWO MAJOR MISTAKES IN THE THEORY OF RELATIVITY

As is widely known, in the thought experiments he uses, e.g. the infamous elevator experiment, etc, in the General Theory of Relativity (and in order to formulate the "equivalence principle"), Einstein **only** supplies the observer, who is sealed within the chamber (his reference system) **with masses** that the observer uses to conduct his experiments.

This observer, conducting his experiments with those masses and under the assumption that Galileo's conclusions about the free fall of bodies are correct, leads Einstein to his well know conclusions:

a. That a body's inertial and gravitational masses are equivalent.

b. That light rays curve within fields of gravity, etc.

What Einstein claims, however, is completely wrong and has no application in Nature, because:

If Einstein had thought to supply the observer with a gyroscope (apart from the masses he supplied him with), he wouldn't have been led to the formulation of the "equivalence principle" and the two above conclusions (a) and (b), in particular.

Consequently, the two major mistakes in the thought experiments Einstein uses in the Theory of Relativity are the following:

MISTAKE I: Einstein accepts the results of Galileo's experiment on the free fall of objects as correct, whereas, in reality (as can be mathematically proven), the results of this experiment are completely wrong.

MISTAKE II: In the thought experiments used in the Theory of Relativity (in order to formulate the "equivalence principle"), Einstein neglected to supply the observer, who is sealed within the chamber (his reference system) with a gyroscope **G**, because:

Supplying the observer with a gyroscope G is absolutely crucial, in order to enable the observer to ascertain whether his chamber is performing straight or curved motion.

This has been rectified in the experiment of the "sealed chamber" in free fall and the experiment of the "rotating chamber", which are included in this project, www.tsolkas.gr (experiments 11 and 12).

Those, then, are the fundamental, and fatal, mistakes that Einstein made (Mistake I and Mistake II), in the process of formulating the "equivalence principle" of the General Theory of Relativity, which is clearly a completely erroneous theory of Physics.

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