

# Gravity – a Neutrino Effect?

John-Erik Persson

About 300 years ago an ether model, that could explain gravity, was presented by Fatio. He assumed very fast and very small particles to propagate in all directions. These particles could penetrate large bodies like Earth. However, this penetration had the effect that the intensity in the flow was very slightly reduced by a body like Earth. Therefore, the flow leaving Earth is somewhat smaller than the flow towards our planet. This small difference creates a force directed towards the center of Earth. This force is the force of gravity, caused by the net flow directed towards our planet. This means that gravity is caused by an ether wind moving towards the center of Earth, a falling ether. So, Fatio's model of gravity is as a difference between a pushing and pulling force.

Fatio was far ahead of his time, and no one in his days could believe in particles penetrating a large planet. So, Fatio's idea seemed to be very crazy at the time. But today, 300 years later, we know that such particles exist, and we call them neutrinos. We have therefore strong reason to ask ourselves, if we perhaps should take up Fatio's idea again. Le Sage made such an attempt once, but failed, since at that time there still were no neutrinos. Today we should know better, and make a new attempt regarding Fatio's idea. So, perhaps it was harmful to science when Newton abolished Fatio's model that was sent to him by Fatio. Newton stated that he did not need a hypothesis with his famous words, '*hypothesis non fingo*'. This seems to indicate an overestimation of the role of mathematics in physics. Today we have no other mechanism that can explain gravity, as Richard Feynman said.

From Newton's model we can derive a modified model by assuming a body producing gravity to be split up in small parts, and then we can apply Newton's model to each of these parts. After that we can integrate these contributions over volume. We then arrive at a more general model, that is not dependent of the form of the body, and not on distribution of matter either. The new model predicts the same as Newton's model for the special case of spherical symmetry in mass distribution. We can therefore say that Newton's gravity is an approximation to our new model. The 2 models become equal for a perfect sphere.

If we compare our model with Fatio's model we can easily see that the 2 models fit very well. It is very reasonable to conclude that the attenuation of neutrinos in a point in space is proportional to the density of matter in that point. Therefore, we can also see that Newton's model also is an approximation to Fatio's model. We can therefore conclude that, if neutrinos exist, they also have a capacity to produce gravity. In other words, we can state that the searched gravitons are in reality the neutrinos. So, **gravity is a neutrino effect**. This idea was regarded as absurd during Fatio's and Le Sage's days. However, this idea is not absurd today, when we have found the neutrinos. So, it seems unhappy that Fatio was ignored – probably since he was not famous, like Newton.

So, the ether is falling in radial direction, and this fact is in a very good agreement to the high precision in the global positioning system (GPS). This system has a spherical symmetry with transmitters on a sphere, and receivers on another sphere, concentric to the first sphere. It seems reasonable to assume that the radial ether wind is equal to the escape velocity. But the ether wind cannot be larger than  $c$ , that is the assumed speed for the individual ether particles. Therefore, we find a max value on the force of gravity. However, this value is very large, and in the order of  $10^9$  times gravity on Earth. This follows from the reasonable conclusion that the force of gravity is proportional to ether wind squared.

Hypothesis fingo, or? Perhaps Fatio was the greatest thinker, although Newton was a very great mathematician?

## Anomalies in gravity

An improved theory should explain more anomalies than earlier models. So, as a **first** example on this theory, we try to explain the Pioneer anomaly with Fatio's model. The radial ether wind from Sun, equal to the escape velocity, is 42.4 km/s at the distance 1 AU (astronomical unit) from Sun. So, we find relative change in 2-way light speed between 20 and 70 AU to be

$$\Delta c_2/c_2 = (1/20 - 1/70)42.4^2 \cdot 10^6/9 \cdot 10^{16} = 0.71 \cdot 10^{-9}$$

This increase in 2-way light speed is not corrected for, and instead regarded as a change in space station speed in relation to light speed of

$$\Delta v/c = \Delta f/2f = \Delta f/4.4 \cdot 10^9 = 0.71 \cdot 10^{-9}$$

2-way propagation means doubled Doppler effect.

$$\Delta f = 3.1 \text{ Hertz}$$

This frequency shift may explain the Pioneer anomaly. Since carrier frequency is the observed variable it may have been misleading for thought to convert this observation to a deceleration in relation to Sun. This means that we have got a corroboration to the idea of a radial ether wind suggested by Fatio.

A **second** type of anomaly, that Fatio can explain, but *not* Newton, is the Allais effect. This effect has been observed in pendulums during solar eclipses. The effect is assumed to be just detectable by a very sensitive gravimeter. However, this method of detection is wrong, since the effect is *not* changing gravity on Earth. Instead, according to the principle of equivalence, this effect is converted to planetary motion. This means that a part of our planet, of about the size of our moon, is moved a very small distance away from the Sun-Moon system. Very, very roughly this distance is estimated here to be of about 1 meter. So, Allais effect also corroborates the idea of a radial ether wind.

The possibility of detecting this small effect is highest just before, and just after the eclipse. Instead of using a gravimeter in a high elevation eclipse, we should use a *long pendulum at rest*, and observe during a *low elevation angle* eclipse. The reason that such a detection can be possible is that the pendulum detects gravity in a point, but the effect on our planet is averaged over a larger volume. An observation supporting this idea is reported by Janos Rohan in <https://astrojan.eu5.org/laki.htm> . These observations were done by observing motions of about 0.3 m in 300 m high tower.

A **third** kind of gravity anomaly is observed in satellites in high orbits, such as those with 12- and 24-hours periods. This anomaly is explainable with Fatio's as well as Newton's gravity models. The relation between radius of orbits and time of periods seems to indicate a small decrease in gravity constant, G, with larger radius of orbits.

An alternative interpretation is that influences from Sun and Moon can cause satellite speed to change during each orbit. Such changes can cause a second order effect on period time, and increase period time.

## Summary

- Fatio presented a simple machinery for gravity 300 years ago, with a falling ether, without knowing about neutrinos.
- A falling ether, according to Fatio, can explain the Pioneer anomaly. Newton cannot do that.
- A falling ether, according to Fatio, can explain the Allais effect. Newton cannot do that.
- The decrease in gravity constant, G, can be an illusion.