

INSTABILITY IN ATOMIC CLOCKS

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ABSTRACT

This paper analyses the frequency stability in atomic clocks. An instability related to the state of motion of an assumed ether is found. The magnitude of this frequency change is equal to effect predicted by the theory of relativity found in the GPS system.

KEYWORDS

Atomic clocks, time dilation.

1. INTRODUCTION

Atomic clocks are regarded to be accurate to such an extent, that they are said to prove that time itself can change its own speed. This is called dilation of time, and is regarded as evidence for the theory of special relativity. This effect is observed as a frequency change, when atomic clocks are moved from stationary on Earth into an orbiting GPS satellite. We have therefore a reason to analyse the functionality of atomic clocks. (GPS means Global Positioning System.)

Critical aspects regarding atomic clocks in the GPS system have earlier been given by an expert regarding GPS, Ronald Hatch¹, in an article called “Those scandalous clocks”. See the reference,¹ where Hatch finds the right result based on a wrong motivation.

2. ELECTRON BEHAVIOUR

The ether wind, v , affects the orbit of a bound electron. This means that the electron changes speed during each period. The component in the electron motion, in relation to the kernel, that is falling in line with the ether wind changes in proportion to $c + v$ and $c - v$. If this motion was along a straight line, we would get the inverse period time proportional to $1 - v^2/c^2$. Since we regard the ether wind only in one dimension of 2 in the orbit, we must multiply v with a Sine function that squared integrates to $\frac{1}{2}$. We therefore find that the inverse period instead becomes proportional to $1 - v^2/2c^2$. This means that the atomic clocks are not as perfect as we earlier have thought, since clock frequency depends on the state of motion of the ether.

We have found a clock frequency caused by a mechanism inside the clocks and being in proportion to $1 - v^2/2c^2$. The theory of relativity states a change in clock frequency caused by the magical concept dilation of time and being proportional to $\sqrt{1 - v^2/c^2}$. Since $v \ll c$ we find that these two equations are predicting approximately equally. We can also see that these relations can be applied to general relativity as well, if we use the escape velocity instead of gravity potential. In radial direction an ether wind is assumed to be equal to the escape velocity, 11.2 km/s on the surface of Earth.

So, we have found an effect on clock frequency from the ether wind, that is essentially the same as the effect Einstein derived based on dilation of time. However, we have only used classical

concepts instead of violating the concept absolute time, by declaring mysterious properties to be associated with time. So, we have found a much simpler explanation model.

3. ETHER

We have assumed an existing ether with the state of motion, v , and thereby been able to explain the behaviour of atomic clocks by mechanisms inside the clocks, and these mechanisms are based on well-known classical concepts. This indicates that the concept 'ether' is important in physics, and this also means that the absurd concept 'time dilation' is not needed. Instead, by reintroducing the ether concept, we can avoid Einstein's special, as well as general, theories of relativity. So, classical physics, including the ether, is enough.

4. DISCUSSIONS

The theory of special relativity emanates from failed tests in 1887 by Michelson and Morley in order to find a second order Sagnac effect, and thereby confirm the existence of the ether. These tests were interpreted in error. In 1913 Sagnac demonstrated that Sagnac effect of first order is detectable and possible to unite with the ether model. So, Michelson and Morley's tests regarding second order Sagnac effect no longer were motivated, and they should therefore be abolished together with the theory of special relativity, that they had caused. Another reason to disregard these tests is the fact that the effect Michelson and Morley searched in two fields in anti-parallel motions in light can be compensated by two fields in anti-parallel motions controlling the separations between atoms in a crystal.

The theory of general relativity emanates from a tradition since Newton of regarding gravity as an attracting force. However, two bodies, without information about each other, cannot define gravity as a product of their masses. This would be in conflict with the law of locality. Instead, gravity emerges inside matter as an effect of the ether, since ether particles are absorbed by matter. They are not colliding with matter. The ether can cause this emergence, since the ether has information about both bodies. This idea is supported by the fact that we observe no aberration in gravity. So, gravity could not be explained, since the ether concept was abolished. A lot of failures regarding ether wind detection resulted in denial of the ether concept. But this denial was based on bad logic, since failures provide no new knowledge and proves nothing. So, no existence cannot be proved by failures, and a not existent concept cannot provide evidences to that fact. Therefore, we find that the 'ether' is an important concept needed for explaining propagation of light and the emergence of gravity.

5. CONCLUSIONS

We have found an instability in atomic clocks erroneously regarded as a time property, called time dilation. This mistake is related to the fact that ether concept has been denied.

The ether concept has been a very difficult problem for scientists ever since Newton's days. Therefore, Einstein's mythology gave scientists an excuse to turn their backs to a very difficult problem and abolish the ether concept. This idea had the effect that we got a century without an ether – and with slow progress in physics. So, we can conclude that Einstein's ether-less physics has been devastating to science and what Ron Hatch¹ suspected was correct, although he presented a not correct motivation for it. Ron's idea was that instability in atomic clocks in the GPS system caused an illusion of time dilation. Harald Nordenson² was also very critical to Einstein's ideas, and said, in the year 1922, that physics would be ruined, although he had no alternative solution to the behaviour of atomic clocks.

Space and time are fundamental concepts in physics that are demanding respect, but Einstein demonstrated disrespect to both concepts. In special relativity he dilated time and in general relativity he bended space. So, both theories are based on false postulates and Einstein's two relativity theories are just a cover up for the lack of one ether model. These ideas are earlier described in "Atomic clocks dependent on the ether wind"³.

6. RESULTS

- We do not need Einstein's relativity theories.
- We do need to reintroduce the ether concept.
- Time dilation is an illusion.
- We must accept instability in atomic clocks.
- We will have a better physics without Einstein.

REFERENCES

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