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FITZGERALD-LORENTZ CONTRACTION
THE FAMOUS RELATIVISTIC β
BASIS OF REATIVITY THEORY IS AN ERROR
THAT PASSED UNNOTICED DURING A CENTURY

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The distance between two points on Earth's surface is not affected by its rotation; it can be measured beginning from whatever of its ends; it can be measured today, and it is the same, measured years or centuries later, excepting naturally the case of geological catastrophes.

Universal experience shows, that the distance between two points in a waggon, ship or plane, can be measured in the waggon, ship or plane, beginning from whatever of its ends, while the vehicle is moving, or stationary, at whatever moment, and the distances are the same.

However, curiously enough, Fitzgerald and Lorentz, in their interpretation of Michelson experiment, have not taken in consideration all that, may be because the velocity of Earth's rotation is very small compared to that of light; moreover the distance L, between the mirrors was very short, less than one meter or something like that; the experiment had been projected to solve other problems, and it has been used by Fitzgerald and Lorentz to prove their contraction. Their culculation, completely erroneous, conduced them to the conclusion, that the distance was maximum in the direction WE, increased by the rotation of the Earth; intermediary in the direction NS or SN, because the hypotennse of a triangle is longer than the others, and shorter in the direction E.W.

The interforemeter has always shown, that the time light needed to cover the distance L in the direction NSN was the same as in the direction WEW. And in spite of that, that conduced Fitzgerald and Lorentz to the conclusion, that the distances vary according to direction. And this is the origin of Fitzgerald and Lorentz contraction, the famous relativistic β , basis of relativity theory.

Later, a little before and during the second world war, the armed forces were needing a rapid method to measure distances; and radar has been invented. Radar has shown, that light requires the same time to cover the same distance, in a going and return travel, in whatever direction on Earth's surface, in spite of Earth's rotation and other movements. I do not know if somebody tried to see, if the durations of a going and a return travel in a WE and EW are equal . But I am sure they are equal and an experiment can confirm that, with high precision,

with radars. Universal experience, and theory, show that. The distance between two points on the surface of a solid sphere is not affected by its rotation, and other movements.

So that the contraction theory of Fitzgerald and Lorentz, on which relativity theory is based, is wrong. And a radical reform of relativity theory is needed. From a practical point of view, the fact is not important, because nobody applies relativity theory. And those who think, that they apply it, in the production of atomic energy, are equivocated. But relativity theory was dominating physics during a century; it is probable that the solutions given by relativists to some problems, are not entirely wrong, but contain useful ideas, that should be conserved. That is why, what is needed, is a revision to discard the effects of contraction theory, the relativistic β .

We should add, that the contractibility of bodies varies enormously from body to body. It may increase with velocity, when the velocities are low; but at high velocities it happens the contrary. Bodies cannot lose their length and become enormous fine leaves, approaching c velocity; and how they recuperate their form, when the velocity decreases? All that shows that the relativistic contraction cannot be used in science.

However during a century, nobody discovered that Fitzgerald - Lorentz contraction is an error. Relativity theory is based on Lorentz contraction, the famous relativistic β . Myself, although critic of relativity theory, see bibliography, I had not discovered, that it is entirely erroneous, out of question. It is only at the end of 1994, that I have observed that Fitzgerald - Lorentz contraction is a big error. And that implies a revision of many themes related to relativity theory; and I invite, physicists to participate in this work.

From an epistemological point of view this case is very interesting. It shows, that we should be cautious, and not accept easily theories, even if they are proposed by outstanding scientists. Unfortunately when a discovery or invention can be applied, it cannot survive when it is wrong. Some people lose money and the question terminates.

BIBLIOGRAPHY

- GALLONI E., RUIVAL H. (1976). *Teoría Especial de la Relatividad*. Buenos Aires.
- PAPADAKIS J. (1934). *From an Ecological and Psychological Point of View there is an abyss between Man and All Other Species. The three Steps in the Evolution of Living Beings. Cultural versus Genetic Evolution. Inaugural lecture in the University of Thessaloniki.*
- (1979a) *Some considerations on Heisenberg Uncertainty Principle*. Buenos Aires.
 - (1979b) *Some Considerations on Relativity Theory*. Buenos Aires.
 - (1979c) *Further Considerations on Relativity Theory*. Buenos Aires.

- (1979d) An Hypothesis on Light Velocity and Relativity of Space and Time. Buenos Aires.
- (1980) Is Time Relative? Slightly Amended Classical Mechanics Fit All known Facts. Buenos Aires.
- (1981) A Physical Theory, that Unifies Classical and Quantum Mechanics. Buenos Aires.
- (1985) Is Time Relative? Classical Mechanics Fit All known Facts. Quasars etc. may Decide the Question. Research Suggestions. Athens.
- (1987) Light Velocity and Relative Matters. Satellites may Decide the Question. Athens.
- (1988a) Research Suggestions on Fundamental Problems of Physics. Athens.
- (1988b) Gravitation, Time Dilation, etc. The Need of Certain Fundamental Research in Physics. Athens.
- (1988c) Newton's Physics. Amended to Incorporate All Later Advances. Athens.
- (1989a) Experimental Apparatus for Fundamental Research on Radiation. Athens.
- (1989b) Errors in Our Days Physics and the Need of Research. Athens.
- (1990) Fundamental Science. Athens.
- (1992) Our conception of the Universe and Relativity theory, etc. Athens.
- (1992) Light velocity, relativity theory, and uncertainly principle. Reflexion is a collision, and that changes the problem. Athens.
- (1992) Relativity theory, uncertainly principle, etc. Further discussion of the consequenses of the fact that reflexion is a collision. Athens.
- (1994) Relativity theory, a critical note. Athens.