

## The Deception Inherent in Coordinate Frame Transformations

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**Abstract.** This article will examine the extent to which coordinate frame transformations hide the reality of physical processes and substitute it with delusion.

### The Galilean Transformation

**I.** The Galilean transformation masks the physical reality of inertial motion. It ignores the existence of an all-pervading physical medium, relative to which motion is defined, and in doing so it implies that a body can have a different kinetic energy according to which frame of reference it is observed from. Even prior to Einstein's theories of relativity, the Galilean transformation was responsible for the erroneous idea that motion is only relative.

In matters relating to translational motion, it is very difficult, but not impossible, [1], to demonstrate the existence of a physical medium relative to which the motion is ultimately defined, but we do get some insights when it comes to rotational motion.

### The Inertial Forces

**II.** In a system that is rotating relative to the background stars, any object that is forced to co-rotate experiences an outward acting radial centrifugal force, and if, for example, an object is constrained to radial motion in a rotating system, it will experience a Coriolis force pushing in the tangential direction against the constraint. While these inertial forces are very real, they are ultimately just a consequence of Newton's first law of motion. They are a consequence of the tendency of a body in motion to undergo a uniform straight-line path. The underlying physical reality of inertial motion lies in the kinetic energy, which we might say is the increase in the intrinsic energy of a body due to the interaction with a physical medium as it moves through this medium, [2], [3].

The inertial forces are best expressed in polar coordinates relative to any polar origin, but for analytical purposes, it is best to choose the centre of rotation, or in the case of planetary orbits, the focus of the orbital path, [4], [5], [6], [7].

It's very important to understand that these inertial forces are not simply an illusion due to making observation from a rotating frame of reference. There is nothing quite like a rotating frame transformation to sow confusion around the

physical reality of the inertial forces. The inertial forces are singularly a consequence of motion. They become physically significant in rotating systems and planetary orbits. But all that a rotating frame transformation serves to do is to impose a circular motion illusion on top of the already existing motion.

## **The Lorentz Transformation**

**III.** The Lorentz transformation is not a coordinate frame transformation at all. It's a description of the physical effects that arise due to motion through the medium for the propagation of light. For full details, see, "*The Lorentz Aether Theory*", [8]. The Lorentz transformation is about the change in the circumference, period, and circumferential speed of the smallest neutral particle as it moves through the luminiferous medium. The particle in question is a tiny rotating electron-positron dipole, while the luminiferous medium itself is an all-pervading sea of such tiny dipoles filling all of space. These dipoles, which amount to dipolar aethereal vortices, are the building blocks of the prevailing magnetic field, [9], [10], [11]. The Lorentz transformation is an extension of Newton's first law of motion for the special case of a rotating electron-positron dipole moving through a dense sea of such dipoles. The so-called transformation actually describes a precession, and it predicts a terminal speed, that being the circumferential speed of one of these rotating electron-positron dipoles when it is at rest, this in turn being the speed of light. The all-pervading sea of electron-positron dipoles is of course the luminiferous medium that serves as the medium for the propagation of light waves, and meanwhile, the Lorentz transformation indicates that this is one and the same medium mentioned in section I above, relative to which inertial motion is defined. It is proposed that any body at all that is moving through this medium generates a surrounding magnetic field, no matter how insignificant it is. If, however, the magnetic field is significant, its presence gives rise to the forces of electromagnetic induction. If a charged particle is present in a magnetic field, if the magnetic field strength changes in time, the particle will experience a force. In the case of a charged particle that is moving through a magnetic field, at right-angles to the magnetic lines of force, it will experience a deflecting force acting at right angles to both the magnetic field and to the original direction of motion.

The deflecting force mentioned above has the same mathematical form as the Coriolis force because their nature is determined by the fine-grained centrifugal pressure emanating from the equatorial plane of the tiny aethereal vortices that comprise the luminiferous medium. But their manifestation is different. The inertial forces are about the effects of the kinetic energy of bodies of ponderable matter in motion, whereas the electromagnetic forces are about the effects of a magnetic field on charged particles.

The Lorentz transformation combines electromagnetism with the straight-line inertial path to introduce a terminal speed equal to the speed of vortex waves through the luminiferous medium, [12]. It deals with the formation of the magnetic field around particles in motion. More specifically, the Lorentz transformation describes the precession of the tiny aethereal vortices in the vicinity of a moving charged body, whereby this precession forms a magnetic field alignment around the body as it approaches the speed of light.

## Conclusion

IV. Coordinate frame transformations do not intersect with physical reality. They do not follow the course of the particle that is being physically affected by its motion through a physical medium. The inertial forces and the electromagnetic forces arise as a consequence of the physical interaction between matter and an all-pervading background medium. Forces and accelerations are not altered simply by making observation from a frame of reference that is in motion relative to another frame of reference. The entire concept of coordinate frame transformations has been the cause of over a century of delusion in modern physics.

By treating the Lorentz analysis, or more accurately the Poincaré/Minkowski analysis, as a coordinate frame transformation, all connection to Maxwell's sea of molecular vortices was lost. In particular, the connection was lost between Maxwell's explanation for Ampère's circuital law and the precession of the vortices around a moving body, as predicted by the Lorentz analysis. This sea of vortices, [13], [14], [15], known to the ancients, is the missing piece in modern physics, while coordinate frame transformations are the joker in the pack.

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See pp. 6-7 in the pdf file in the link above, beginning at the paragraph that starts with, **Possible Structure.** –, and note that while the quote suggests that the ether is incompressible, this is almost certainly not the case. The quote in question, in relation to the speed of light, reads,  
**“The most probable surmise or guess at present is that the ether is a perfectly incompressible continuous fluid, in a state of fine-grained vortex motion, circulating with that same enormous speed. For it has been partly, though as yet incompletely, shown that such a vortex fluid would transmit waves of the same general nature as light waves— i.e., periodic disturbances across the line of propagation—and would transmit them at a rate of the same order of magnitude as the vortex or circulation speed”**

[13] Clerk-Maxwell, J., “*On Physical Lines of Force*”, Philosophical Magazine, Volume XXI, Fourth Series, London, (1861)  
The tiny aethereal vortices self-align around an electric current so that their mutual rotation axes trace out solenoidal lines of magnetic force.  
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**“All space, according to the younger Bernoulli, is permeated by a fluid aether, containing an immense number of excessively small whirlpools. The elasticity which the aether appears to possess, and in virtue of which it is able to transmit vibrations, is really due to the presence of these whirlpools; for, owing to centrifugal force, each whirlpool is continually striving to dilate, and so presses against the neighbouring whirlpools.”**

[15] O'Neill, John J., ***“PRODIGAL GENIUS, Biography of Nikola Tesla”***, Long Island, New York, 15th July 1944, Fourth Part, paragraph 23, quoting Tesla from his 1907 paper ***“Man’s Greatest Achievement”*** which was published in 1930 in the Milwaukee Sentinel,

***“Long ago he (mankind) recognized that all perceptible matter comes from a primary substance, of a tenuity beyond conception, filling all space, the Ākāśa or luminiferous ether, which is acted upon by the life-giving Prana or creative force, calling into existence, in never ending cycles, all things and phenomena. The primary substance, thrown into infinitesimal whirls of prodigious velocity, becomes gross matter; the force subsiding, the motion ceases and matter disappears, reverting to the primary substance.”***

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