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The Uniform Straight-Line Inertial Path

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***Abstract*. An argument that is often presented in order to debunk the idea that a physical medium exists in space to serve as the carrier of light waves, is, that such a medium would interfere with inertial motion and cause friction in the planetary orbits, resulting in the planets spiralling into the Sun.**

The counter-intuitive behaviour, however, that is observed in the case of precessing gyroscopes and rattlebacks, can only be explained if such a medium does exist, otherwise the gravity defying forces and mysterious torques would be pushing from empty space.

Introduction

I. The generally accepted position is that space is empty and that the uniform straight-line inertial motion that is undergone by objects that are not being acted upon by a force, is simply a consequence of the fact that there is nothing in their way that would cause friction. One problem with this perspective, however, is that if there is nothing in space, then there is no physical basis upon which motion itself can be defined. On the other hand, if the uniform straight-line inertial path is a product of regulation by an all-pervading dense medium that is possessed of fine-grained gyroscopic elasticity, this would provide a basis upon which motion could be defined, as well as helping to explain the terminal speed as predicted by the Lorentz transformations.

Gyroscopes and Rattlebacks

II. A pivoted gyroscope that is spinning can lean very far over, such that intuition suggests it should fall, [1], where in fact it doesn't fall. One would tend to think that the gravitational force acting through its centre of mass should ensure that it tumbles off the pivot, but the fact that this doesn't happen is generally explained away on the grounds, that subject to the constraints, every element of the gyroscope is simply tending to follow its uniform straight-line inertial path. While a mathematical analysis can indeed show this to be true, we don't however need any maths to notice that the primary reason why the gyroscope doesn't tumble is because it must be pushing against some medium that fills the surrounding space, but where this medium is not recognized to exist in mainstream physics. Meanwhile, the same argument holds in relation to the reversal torque that we observe in the case of a rattleback, [2]. Both of these precessing objects appear to induce an elastic reaction in the surrounding space that is easily observable.

Conclusion

III. The uniform straight-line inertial path is a product of fine-grained gyroscopic stability. As a body moves through the dense all-pervading sea of tiny aethereal vortices, **[3], [4], [5], [6], [7],** it induces within this sea of vortices a fine-grained precessional elasticity. These vortices are so small that they can pass through the interstitial spaces between the atoms and molecules of ponderable matter as easily as water passes through the holes in a basket. As a body moves through this sea of tiny vortices, it causes the vortices to align along their mutual rotation axes to form solenoidal vortex rings around the body, hence producing a disc-like magnetic field, **[8]**. This is an extension of Ampère's Circuital Law into inertial motion, although the induced magnetic field will be very weak at laboratory speeds. Meanwhile, the presence of the sea of tiny vortices does actually cause a terminal speed as predicted, at least approximately, by the Lorentz transformations.

References

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