Kinematics in the Special Theory of Ether

Karol Szostek[1], Roman Szostek[2]

[1]*Rzeszow University of Technology, Department of Fluid Mechanics and Aerodynamics, Rzeszow, Poland*
kszostek@prz.edu.pl

[2]*Rzeszow University of Technology, Department of Quantitative Methods, Rzeszow, Poland*
rszostek@prz.edu.pl

Abstract:

The aim of this paper is to show that the Michelson–Morley and Kennedy–Thorndike experiments are not sufficient for justification of the theory of special relativity because these experiments can be explained using another theory in which a universal reference frame exists.

In this paper, we derive a novel theory of body kinematics with a universal reference frame. We call this theory the Special Theory of Ether (STE).

The reason that the universal reference frame could not be found using the Michelson–Morley and Kennedy–Thorndike experiments is also explained.

As well, based on a geometric analysis of the Michelson–Morley and Kennedy–Thorndike experiments, we derive another coordinate and time transformation that differs from the Lorentz transformation. In addition, the transformation law of speed, the formula for the addition of velocities for the absolute velocity, as well as length-contraction and time-dilation formulas are derived.

The paper contains only the investigations of the original authors.

Keywords: kinematics of bodies, universal frame of reference, coordinate and time transformation, one-way speed of light

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