

Abstract Submitted  
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**The MSRT, The Interpretation of The Lorentz Transformation Equations, Faster Than Light, The Cherenkov Radiation, Wormholes and The Pioneer Anomaly** AZZAM ALMOSALLAMI, the science center for studies and research — In this paper, I'll give an interpretation for the Lorentz transformation equations depending on my Modified Special Relativity Theory MSRT [23]. My interpretation illustrates, the Lorentz factor is equivalent to the refractive index in optics. Also, according to my MSRT, it is possible measuring speeds of particles or electromagnetic waves to be greater than light speed in vacuum, but in this case, there is no violation for the Lorentz transformation or causality, and thus it is keeping on the laws of physics to be the same in all inertial frames of reference. From that I refute the proposed claim by Cohen and Glashow in their paper [33] refuting the OPERA experiment, depending on the analogy of Cherenkov radiation, where this proposed claim is based on a wrong concept to the superluminal speeds, and this wrong concept is based on a flaw that is existed in the special relativity theory of Einstein. Also, in this paper I'll illustrate how the Modified general Relativity must be modified according to MSRT, and then the worm holes and the Pioneer anomaly will be solved according to that.

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