

Translation into English: [Chapter 2 - Catalogue of Errors for Both Theories of Relativity](#)

from the German documentation of G.O. Mueller

"On the Absolute Magnitude of the Special Theory of Relativity - A Documentary Thought Experiment on 95 Years of Criticism (1908-2003) with Proof of 3789 Critical Works" - Text Version 2.1 - June 2004  
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## J: Mass-Velocity Relationship / Error No. 1

### According to Albert Einstein, velocity-dependent mass is a relativistic effect

*Albert Einstein derives the claim of velocity-dependent mass for electrons (AE 1905, pp 917-919) and limits this to slowly moved electrons that release no energy in the form of radiation. Then he expands his deduction (p. 919) to "ponderable materielle Punkte" [measurable material points], from which he "makes an electron (in our sense) by adding a randomly small electrical charge". The artificiality of the assumptions accumulates to completely unlikely objects:*

- *electrons that do not radiate, because they are only moved slowly (does the alleged speed dependency no longer apply to fast-moving, radiating electrons?)*

- *then, measurable points of matter become electrons, in the sense of Albert Einstein, by charging them (Were his electrons not normal electrons? And how can, in physics, a measurable point of matter become a particle of particle physics, in whatever sense?)*

- *What generally valid conclusions should be drawn from these assumptions?*

*Galeczki / Marquardt (1997, pp 135-136): "Strictly speaking, Newton's 2nd law divides the universe into 'our examinable system' and 'the rest'. The velocity-dependent mass must therefore be an absolute effect that reflects the influence of the hierarchically structured 'rest system'. This rest system is a one-and-only and is therefore the identified global reference system ... per se, with respect to which the definition of an absolute velocity ... is both desirable and absolutely necessary." And finally (p. 138): "At any rate, the speed dependency of masses, as verified by 'Kaufmann-like' experiments ... is already sufficient from the start to disqualify any relativistic formulation of the mechanics and the believe in endlessly many inertial systems of equal standing. Mass increase at velocity  $w$  only makes physical sense as an absolute effect in the only identified reference system."*

*Theimer (1977, pp 83-84): "In the case of experiment a physical process must be postulated which, under acceleration, produces additional mass (and does away with it again on decelerating). Purely metrical impressions cannot create mass. Two physical mechanisms have been proposed: an electromagnetic effect that creates an apparent mass; and a materialization of the kinetic energy of the moving object that results in real mass. It becomes immediately apparent that both processes are conceivable within the framework of absolute time and three-dimensional space, without any need for time-change, Lorentz transformations, impulse rescue, etc., i.e. they are independent of the theory of relativity." - Theimer (p. 82) reported the opinion of M. Jammer (1964): "According to Jammer, in the theory of relativity "mass" is nothing other than the result of certain operations in terms of which the definitions are closely bound up with space-time considerations. Thanks solely to these connections, the result of the measurements is dependent upon the velocity. In other words, confirmation of the theory of relativity presupposes the theory of relativity." Jammer (1964, pp 180-184) had cited the revision of all experiments conducted by Farago / Janossy (1957) with the result (p. 180) that they "support the validity of the relativistic formula far less than is normally assumed."*

*Jammer points out (p. 182), that the equation could also be differently formulated (p. 182), "without any mention whatsoever having to be made of a 'variable mass'." (p. 183): "In the theory of relativity "mass" is nothing other than the result of certain operations in terms of which the definitions or specifications are*

*closely bound up with space-time considerations. Thanks solely to these connections, the result of the measurements is dependent upon the velocity."*

As a basic follower of Einstein's theory, Jammer at least admits that the statements as to the speed dependency of mass is a question of the chosen terms and definitions, and that the measurements can even be interpreted without the ideas of variable mass.

Galeczki / Marquardt dispute each relativistic aspect of the measured values. Theimer too emphasizes the non-relativistic nature of the found effects and intensifies the criticism on the point that, here, the confirmation of the theory of relativity requires the presupposition of the theory of relativity. As regards the STR, this is virtually a standard result.

AE 1905. - Faragó, P. S.: Review of the experimental evidence for the law of variation of the electron mass with velocity / P. S. Faragó, L. Jánossy. In: Nuovo cimento. Ser. 10, Vol. 5. 1957, No. 6, pp 1411-1436. - Jammer, Max: Der Begriff der Masse in der Physik / translated from the Engl. by Hans Hartmann. Darmstadt 1964. 248 pages - Theimer, Walter: Die Relativitätstheorie : Die Relativitätstheorie : Lehre - Wirkung - Kritik. Bern (etc.): Francke 1977. 192 pages - Galeczki / Marquardt: Requiem für die Spezielle Relativität / Georg Galeczki, Peter Marquardt. Frankfurt a. M.: Haag u. Herchen, 1997. 271 pages.