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On the Abuse and Use of Relativistic Mass

[Gary Oas](#)*(Submitted on 18 Apr 2005 (v1), last revised 21 Oct 2005 (this version, v2))*

The concept of velocity dependent mass, relativistic mass, is examined and is found to be inconsistent with the geometrical formulation of special relativity. This is not a novel result; however, many continue to use this concept and some have even attempted to establish it as the basis for special relativity. It is argued that the oft-held view that formulations of relativity with and without relativistic mass are equivalent is incorrect. Left as a heuristic device a preliminary study of first time learners suggest that misconceptions can develop when the concept is introduced without basis. In order to gauge the extent and nature of the use of relativistic mass a survey of the literature on relativity has been undertaken. The varied and at times self-contradicting use of this concept points to the lack of clear consensus on the formulation of relativity. As geometry lies at the heart of all modern representations of relativity, it is urged, once again, that the use of the concept at all levels be abandoned.

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