

End of Myth— $E = mc^2$ No Relativity Offspring

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This study obliterates the myth that Einstein's 1905 theory of relativity births $E = mc^2$, exposing it as a misattributed hijacking of a classical (non-relativistic) truth. In §10 of Einstein's seminal paper (1), the derivation falters. Two acceleration expressions for an electron in frame K, both arriving from $\frac{d^2\xi}{d\tau^2} = \frac{\epsilon}{m} X'$ in frame k: $\frac{d^2x}{dt^2} = \frac{\epsilon}{m} X$ (from the Principle of Relativity (PoR), v -free) and $\frac{d^2x}{dt^2} = \frac{\epsilon}{m} \beta^3 X$ (from Lorentz transformations, $\beta = \frac{1}{\sqrt{1-\frac{v^2}{c^2}}}$) align only

when $v = 0$, a trivial absurdity that guts the relativistic path to $E = mc^2$, as $v \neq 0$ defines the problem. Therefore, the expression $\beta^3 v dv$ under the integral in §10, purportedly deriving $E = mc^2$, loses meaning. This collapse traces to §6, where Lorentz transformations, relativity's rotten core, contradict the Principle of Relativity: $\frac{1}{c} \frac{\partial Y}{\partial t} = \frac{\partial L}{\partial z} - \frac{\partial N}{\partial x}$ in frame K becomes $\frac{1}{c} \frac{\partial}{\partial \tau} \beta \left(Y - \frac{v}{c} N \right) = \frac{\partial L}{\partial \xi} - \frac{\partial}{\partial \zeta} \beta \left(N - \frac{v}{c} Y \right)$ in frame k, clashing with PoR's v -free $\frac{1}{c} \frac{\partial Y'}{\partial \tau} = \frac{\partial L'}{\partial \zeta} - \frac{\partial N'}{\partial \xi}$ —equating constants to variables, an irreparable fracture.

Einstein's PoR application in §6 is stark: he swaps K's coordinates and fields for k's, preserving form without even a whisper of Lorentz transformations. In §10, this treachery fells $E = mc^2$'s purported derivation, while §6's equation systems in frame k—proclaimed identical yet sundered by velocity dependence—bury the theory in contradiction. Yet $E = mc^2$ stands sovereign in classical physics: for a mass m under force $F = ma + \frac{mv^2}{2s}$ (correcting D'Alembert's null work flaw), with $s = \frac{1}{2} vt$ and $a = \frac{v}{t}$, work $E = F \cdot s = mv^2$ scales to mc^2 as $v \rightarrow c$; also, multiply both sides of Ampere's law scalarly by \mathbf{E} : $c^2 \mathbf{E} \cdot (\nabla \times \mathbf{B}) = \mathbf{E} \cdot \frac{\partial \mathbf{E}}{\partial t} + \mathbf{E} \cdot \frac{1}{\epsilon_0} \mathbf{J}$ yields dimensions $c^2 \left[\frac{kg^2}{s^5 A^2} \right] = \left[\frac{kg^2 m^2}{s^7 A^2} \right]$, rationalizing to $c^2 [kg] = \left[\frac{kg m^2}{s^2} \right] = [J]$, another classical root of $E = mc^2$ —no relativity required. Thus, relativity myth crumbles—these aren't mere errors; they're its death throes, universal across its tendrils. No mathematical shell, no experimental crutch, can resurrect this corpse—physics must purge it or rot in delusion.

References

1. A. Einstein, Zur Elektrodynamik bewegter Körper, Annalen der Physik, 17, 891-921 (1905).

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