E = mc^2 Derived from Maxwell and Newton's Second Law of Motion

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Abstract: Classical electromagnetic wave theory explains that a wave transporting energy E also has momentum $\rho = E/c$. Using momentum preservation, undistorted Euclidean space, and absolute time (Galilean system) we derive the energy-mass equivalence $E = mc^2$. De Broglie's matter wave $\lambda = h/\rho$ for moving particles is derived on the premise of a phase velocity c^2/v, and on the premise of the Lorentz coordinate and time transformation from Einstein's special relativity. In an absolute Galilean system, matter waves need to be rethought: We derive for a particle with linear momentum ρ having a velocity v a matter wave $\lambda_\rho = (hv)/(\rho c)$. For a particle with angular momentum L we use Bohr's postulate to define a matter wave $\lambda_L = (hr)/L$.