

Abstract Submitted
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Mass Energy Equivalence Formula Must Include Rotational and Vibrational Kinetic Energies as Well As Potential Energies STEWART BREKKE, Northeastern Illinois University (former grad student) — Originally Einstein proposed the mass-energy equivalence at low speeds as $E = mc^2 + 1/2mv^2$. However, a mass may also be rotating and vibrating as well as moving linearly. Although small, these kinetic energies must be included in formulating a true mathematical statement of the mass-energy equivalence. Also, gravitational, electromagnetic and magnetic potential energies must be included in the mass-energy equivalence mathematical statement. While the kinetic energy factors may differ in each physical situation such as types of vibrations and rotations, the basic equation for the mass-energy equivalence is therefore $E = m_0c^2 + 1/2m_0v^2 + 1/2I\omega^2 + 1/2kx^2 + W_G + W_E + W_M$.

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