Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Vibrational and Spin as well as Linear Kinetic Energies Should Be Included in Pair Production and Annhiliation Energy Relations STEWART BREKKE, Northeastern Illinois University (former grad student) — By including the vibrational and spin Kinetic Energies in Pair Production and Annihilation Formulas a closer reconciliation between theory and experimental results can result. The creating photon may create particle vibration and spin as well as mass and linear motion. In pair production: $hf = 2m_0c^2 + 1/2m_0v_-^2 + 1/2m_0v_+^2 1/2I\omega_{r_-}^2 + 1/2I\omega_{r_+}^2(n + 1/2)\hbar\omega_{v_-} + (n + 1/2)\hbar_{v_+}$. In pair annihilation at least two photons must be produced which get their energy from the linear, vibrational and spin kinetic energies as well as the mass-energy conversion. $hf_1 + hf_2 + ... = 2m_0c^2 + 1/2m_{0_-}v^2 + 1/2m_{0_+}v^2 + 1/2I\omega_{r_-}^2 + 1/2I\omega_{r_+}^2 + (n+1/2)\hbar\omega_{v_-} + (n+1/2)\hbar\omega_{v_+}$.

Stewart Brekke
Northeastern Illinois University (former grad student)

Date submitted: 25 Jan 2008 Electronic form version 1.4