160(8): Inverse Compton Scattering from Static Photons

This is the phenomenon of relativistic electrons scattering from photons. The equations of Compton scattering are:

$$\gamma m_1 c^2 + m_2 c^2 = \gamma' m_1 c^2 + \gamma'' m_2 c^2 \quad -(1)$$

and

$$\underline{p} = \underline{p}' + \underline{p}'' \quad -(2)$$

The equations of inverse Compton scattering are:

$$\gamma m_2 c^2 + m_1 c^2 = \gamma' m_2 c^2 + \gamma'' m_1 c^2 \quad -(3)$$

and eq. (2) again.

It is only possible to consider inverse Compton scattering from a static photon if the latter has mass, and rest energy:

$$E_0 = m_1 c^2 \quad -(4)$$

where m_1 is the photon mass. A massless photon does not have a rest frame, and therefore has no rest energy. This is one of the many contradictions of the standard model.

If, however, it is considered that the universe contains static photons, evolved over billions of years, then eqs. (3) and (4) apply. That would be another test of the de Broglie / Einstein theory. In this case the photon mass from eq. (3) is:

$$\boxed{m_1 = \frac{\hbar}{c^2}\left(\omega' + \omega'' - \omega\right)} \quad -(5)$$

where ω'' is the angular frequency acquired by the initially static photon, and ω and ω' are the initial

2) and final angular frequency of the electron.

If we consider both eqs. (2) and (3), the photon mass is given by:

$$x_1 = \frac{\omega\omega'}{\omega - \omega'} - \left(\frac{x_2^2 + \left(\omega^2 - x_2^2\right)^{1/2}\left(\omega'^2 - x_2^2\right)^{1/2}\cos\theta}{\omega - \omega'} \right) \quad -(6)$$

where $x_1 = \frac{m_1 c^2}{\hbar}$, $x_2 = \frac{m_2 c^2}{\hbar}$. $-(7)$

However, we now run into serious difficulty because it is known that these ideas of Quantum Electrodynamics have collapsed. This is a situation that is unprecedented in the recent history of physics. Usually, Compton scattering and inverse Compton scattering are considered as fully known, but they turn out to be unknown. The experimental data are valid, but an entirely new theory is needed. (Cosmological conclusions based on inverse Compton scattering are entirely wrong.
