

Abstract Submitted
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Recoil Redshift with Coherence C.F. GALLO, Superconix Inc — “Recoil Redshift” is due to the elastic interaction of photons/light with any individual electron, proton, ion, atom or molecule. This generalized Compton effect describes an individual photon-particle interaction where Energy, Linear Momentum and Angular Momentum are conserved, with NO change in the internal energy of the particle. Per Compton, the lost photon energy is zero in the forward photon propagation direction, and the energy loss increases with scattering angle. This is an INDIVIDUAL INcoherent process. To describe collective coherent effects, add/include Huygens forward reconstruction from multiple photon/particle redshifted scatterings. A coherent redshift will occur if the scattered photons’ energies are WITHIN the initial linewidth. This yields an asymmetrically broadened redshifted line in the forward coherent direction with clear imaging properties. This is a coherent redshifted version of Rayleigh scattering which assumes identical non-redshifted photons. BUT the Compton Conservation energy-loss process must occur. The search for this small Recoil redshift is a good research project for ultra- precise “frequency combs” in gases (atomic and molecular), plasmas and combinations.

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