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The proof of the existence of the constant rest mass for photons in several ways GH. SALEH, REZA ALIZADEH, MOHAMMAD REZA KHEZRI, KHALIL KABOLI, Saleh Research Centre — The photoelectric effect proves that the light must be consisting of particles and on the other hand the wave nature of light was shown through the double-slit experiment of Thomas Young. In this experiment, we could observe the interference fringes that justify the light as a wave. But we know that the constant mass of the electron was proven and electron, the same as photon, have interference fringes in the double-slit experiment. Therefore, there is at least one example that a particle with constant rest mass has interference fringes in the double-slit experiment and the removal of constant rest mass, for photon, is not a good solution to answer the observance of interference fringes in the double-slit experiment. In this paper, we explain different real examples in different branches of physics to demonstrate violations in the Conservation of mass and energy principle, such as: The relationship between temperature of a cavity and the wavelength of the emitted spectrum of a solid-state laser, the dependence of the performance of solar cells and the wavelengths of light, etc. It seems that we need to use a new theory about photon to improve all branches of physics which encounter with photon.

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