Contribution ID : **633** Type : **Poster**

Rest mass and energy of photon in the form of complex number.

Monday, 5 October 2020 17:30 (150)

The behaviour of a photon is strange. It possesses both wave nature and particle nature. Some experiments show both behaviours of photons can coexist simultaneously, while some other experiment state that both properties do not coexist simultaneously. According to electromagnetic theory, the rest mass of photon in free space is zero and also photon has non zero rest mass, as well as wavelength-dependent. The very recent experiment revealed its non-zero value is 10ˆ (-51) g. Even experimental results concluded within matter (dispersive) shows its imaginary rest mass. We have no exact answer as to why photon incarnates itself with versatile mass. Here we try to theoretically investigate about the rest mass of a photon when it touches the surface of matter, it makes illusion and mathematically the rest mass is a complex number that mass dubbed illusive mass. Rest mass of the photon depends upon scalar curvature of the surface of matter and wavelength of the photon. Photon itself reveals illusion posing with mass because of its dual nature. Corresponding energy of the photon, which imply the unknown form of the energy of the Universe i.e. one of the forms of Dark Energy.

Primary author(s) : Mr. GORAY, Mahendra (Pondicherry University,INDIA)

Presenter(s) : Mr. GORAY, Mahendra (Pondicherry University,INDIA)

Session Classification : Poster session

Track Classification : Gravitation and cosmology