

Abstract Submitted
for the APR20 Meeting of
The American Physical Society

Dueling Realities of a Photon Due to Its Particle – Wave Duality Nature. HASSAN GHOLIBEIGIAN, Researcher — When a photon exists in a “superposition” of two possible states, it displays both polarizations - the axis on which it spins (either vertical or horizontal)-at once, as dictated by the laws of quantum mechanics. It seems that the consequences of these two different polarizations are different realities with respect to the observer. On the other hand, before the photon is measured, it displays both polarization at once. Here, it seems that; there is the relation between these two polarizations and the particle-wave duality nature – “wavy-like” motion of the photon may depend on the time’s nature and “jerky-like” motion of the photon may depend on the space’s nature [*Gholibeigian*, APS March Meeting 2015, abstract #V1.023] – of the photon. If yes, we may define a relation between superposition, dueling realities, polarizations, particle-wave duality nature of the photon and their interaction with each other and space-time. In other word, it seems that the polarizations help the photon to show off a particle – wave duality face in motion by itself in interaction with each other and space-time. Consequently, Alice and Bob can observe two deduced versions of a reality, or two different realities at once in a superposition of two possible states of the photon.

Hassan Gholibeigian
Researcher

Date submitted: 28 Dec 2019

Electronic form version 1.4