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Open Access Journal of Astronomy
ISSN :2996-6701

Reality and the Collapse of the Wave function

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Mini Review

Volume 2 Issue 2

Received Date: December 13, 2024

Published Date: December 24, 2024

DOI: 10.23880/oaja-16000150

Abstract

We discuss the collapse of the wave function as a phenomenon leading to the exit from a timeless present to a three dimensional course of events. We believe we need five dimensions to fully describe the appearance of the volume occupied by the particle before the measurement and its collapse to a point particle.

Keywords: Wave function; Space time; Antimonopole Pairs

Introduction

In a series of published papers we support that the mass creates a curvature in space time and thus new Volume is created. The volume of the particle is never observed because we live in a five dimensional universe of fluid space time [1,2].

However all the thermodynamic quantities are assigned values in each point in space through the wave function [3].

The relation between observer and subject under observation arises from the physical reality of closed and open systems [4-6].

When the quantum system is left closed, that is without interaction with the environment classical time freezes. We do not have cyclical time as is believed but instead cyclic procedures take place inside the system [7]. The beginning of measuring classical time comes together with the phenomenal transformation of spin to magnetic monopole antimonopole pairs [8,9]. Only when entropy starts to change do we have a beginning of the axis (zero) for classical time [10-15].

Main Part

The collapse of the wavefunction happens in the following way. In five dimensions the circle closes. The circle in five dimensions is a hypersurface of simulataneity which becomes spherical shell and which in turn in three dimensions it is the volume of the sphere which collapses to a point. This deformation of the sphere to a point does not occur continuously in three dimensions because the existence of magnetic monopole antimonopole pairs which describe the spin of the particle is prohibited in three dimensions [16]. The monopoles restore the symmetry of Maxwells equations which is why symmetry is breaking in the wavefunction collapse. From the experience of every physicist indeed if we integrate a complex circularly (five dimensions) we find its poles [17,18]. The spherical surface is a Riemann surface with its two poles of authority, north and south As the circle is transversed the differential along the path is the following:

$$dY = dm + idV \quad (1)$$

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In a closed loop the mass returns to its Normal value and the volume drops to zero [19].

The breaking of symmetry is accompanied by heat exchange and this way time moves forward. This would explain the Dirac delta functions. Actually they are Gaussians and have the property that they are infinitely smooth and you cannot have a grip of previous reality of the particle. According to the central limit theorem every random distribution tends to a Gaussian [20-23].

The metric of spacetime is:

$$d\tau^2 = d\vec{r}^2 - c^2 dt^2 \quad (2)$$

It is only natural to assume that the collapse of the wavefunction occurs through Gaussians of the type:

$$\delta = e^{-dt^2} \quad (3)$$

This should justify the arguments of scientists that seek the hidden variables through the connection of the wavefunction with Markov or random process. This branch of physics is called stochastic quantum mechanics and is mainly driven by the following formula:

$$\frac{d\psi}{dt} = -K\psi dt \quad (4)$$

This way during the absorption of the photon the following formula holds:

$$\ddot{A}E\ddot{A}t > \hbar \quad (5)$$

This is the situation when the wavefunction collapses and entropy is gained. In normal conditions we have:

$$P = \frac{|\psi|^2}{N} = e^{S/K_B} \quad (6)$$

Conclusion

Unlike some other authors we believe that although stochastic processes lead to the collapse of the wavefunction the reason for that is not Brownian motion but the fluid or stochastic nature of spacetime altered by mass. We encourage the reader to have a look at the previous work of the author.

We believe that soon a book is going to be published by some more experts discussing the subject in 2025 when we will celebrate 100 years of quantum. We wish good luck to the scientific community.

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