Nutation of A Quantum State Found Using The Formula Given By The Single Unified Law

Mayukh Maitra

Abstract- *There is nutation of a quantum state, owing to superposition and interference, as viewed in a rotational frame of reference, is resolved in space time using the formula given by the single unified law.*

DEFINITIONS:

The certainty is given as: [c = exp(x. ln(x))], which is known as the power function, with the base and exponent as (x), as a variable. The uncertainty is a complement of the certainty. The average power function, considered for a given system and the surrounding respectively, exhibits compression that is approximated as linear, which represents a partial measure.

The root function, in the logarithmic transformation, gives the entropy function, written as: [s = exp.((1/x). ln(x))]. The other entropy function is given by the complementary part of the variable (x) and the respective complements resulting in two pairs that so form the upper and lower bound, appropriately. The difference of the entropy functions, which is between the upper and the lower bound, considered appropriately, is linear as a partial measure. The average of the entropy functions, is a total measure, which exhibits augmentation that tends to non- linearity.

I. INTRODUCTION

1) The paper, [Ref. 1], discusses about the deviation observed for the average entropy and the underlying function, where the deviation is found to be zero at the point of entanglement that is the singularity; and the deviation is found to match with the half linear function of the average uncertainty, which is considered for a single unit as a system.

2) The average of the partial measures is approximated as linear, with a presumption of the underlying function also to be linear. However, the middle value of entropy, that is formed between the two extreme bounds, is a total measure that is found to exhibit augmentation, having a non-linear form with a strict monotonicity.

3) Thus, there exists interference at the point of entanglement, where the middle value of entropy forms an additional root apart from the boundary points; and there is superposition elsewhere between the boundaries, where the deviation gives rise to a precession that intends to ninety degrees to the direction of rotation, as viewed by an observer in a rotational frame of reference.

4) The single unified law [Ref.1], which connects the partial and total measures of probability, is given as:
" Starting with a single information of a point located on either bound of entropy, the other bound is obtained and the entropy difference is known; the average uncertainty is calculated from the entropy difference; and modulus of the difference between the average entropy and the originating function is found by the average uncertainty. "

5) The Single Unified Law gives the formula for the middle value of entropy, between the two extreme bounds, written as :

$$S := (1/2).\{ \exp((1/a).\ln(a)) + 1 - \exp((1/(1-a)).\ln(1-a)) \} ;$$

where (a) is the linear variable of probability.

II. DISCUSSIONS

a) The underlying function, such as the cumulative failures, or failure probabilities, exhibit a fan of curves by the different failure rates, each of which attains a constant value with a finitely large number of observations taken in a stipulated interval of time. The fan of curves are also representatives of various load distributions, such as serial or parallel system configurations, by the exponential reliability functions. It may be noted that, there is a connection between the central value and the equivalence, for the one's complements, that gives the singularity and the entanglement. A deviation of the average entropy, with an augmentation to non-linear form, which is owing to the superposition and interference, may be viewed as a shift either to a higher rated function or a scaling on the domain, in order to reach a higher value, and vice versa. The deviation generates several points of entanglement for these functions, with a singularity that exists. Hence, there is wobbling.

b) A phenomenon is a change that occurs in the real world, and the macrocosm, that is so subsumed in a relativistic approach. The observer is supposed to be in a moving or rotating frame of reference, which is accelerating relative to the inertial frame of reference. Hence, the view of the observer shifts from a linear to non-linear form, as held by the relativistic approach, is well proven.

c) The view of the observer which is non-linear, may be attributed to motion or dynamics that is applicable to quantum particles. And so, the view is extensible to the natural phenomena. The mechanics involves induced forces, or pseudo forces, as is evident by nutation in the perpendicular direction to rotation.

III. CONCLUSION

1) Observation of a quantum pair, or poles, that is generated in a system of source, shows a deviation from linearity in space time.
2) There exists uncertainty within the system of observation; and there is entropy, as is the thermodynamic property of disorder, which is found to be ever increasing in the universe.

3) The frame of reference for the observer is rotational, or accelerating in time, relative to the inertial frame of reference.

4) It is conclusive that, there is induced nutation of the quantum state, as the middle value of entropy formed by the two extreme bounds, a priori and a posteriori to the point of entanglement, is resolved using the formula given by the single unified law.

REFERENCES

[1] Maitra M. [2022], "Realization Of The Instantaneous System State By Observation Of A Quantum Pair Using The Single Unified Law", International Journal for Science and Advance Research in Technology (IJSART), Vol.8, Issue 6, June, 22, pp. 5-6.
[2] Maitra M. [2022], "Formulation Of A Single Unified Law – In The Scientific Theory For A Change – As A Measure For Variations Of Observation Data In Empirical Data", International Journal for Science and Advance Research in Technology (IJSART), Vol.8, Issue 1, Jan. 22, pp. 258-261.
[3] Maitra M. [2021], "Explanation of A Scientific Theory For A Change- In General And Special Form- By Using Metaphysics.", International Journal for Science and Advance Research in Technology (IJSART), Vol.7, Issue 12, Dec.21, pp. 48-60.
[4] Maitra M. [2021], "In Continuation to Quantum of Time", Educreation Publications, India;
[5] Maitra M. [2020], "Quantum of Time", Educreation Publications, India;
[6] Maitra M. [2019], "Principles of Probability Relations and Philosophical Science",Part-I& II, Educreation Publications, India (also as e-book).

The author is M. Tech. in Aerospace Engineering and has experience as a Research Scholar for Ph.D. in Reliability Engineering. The author has twenty five years of experience in investigation of aircraft events and failure mode and effect analysis for systems. The author has published several books in probability in information theory and reliability analysis. His present area of interest is quantum theory.