Tessellated interpretation of Quantum world

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Abstract

The Copenhagen interpretation is a collection of axioms or doctrines that interpret the mathematical formalism of quantum mechanics, largely devised in the years 1925–1927 by Niels Bohr and Werner Heisenberg. Goal here is to prove Copenhagen interpretation is not complete and can be easily explained with help of my previous work to get a complete picture of quantum world. Similarly many world interpretation of quantum world is proved inadequate and not required to explain quantum world.

Keywords – *Copenhagen interpretation, much world interpretation Quantization of space, Heisenberg Uncertainly Principle.*

I. INTRODUCTION

Copenhagen interpretation is a collection of axioms which do not give us complete view of Quantum world, it depends upon indeterministic and probability to explain Quantum mechanics. Goal is to explain all the axioms in complete details with help of my previous published work.

II. HEISENBERG UNCERTAINTY PRINCIPLE

Copenhagen interpretations one axioms is, if two properties are related by an uncertainty relation, no measurement can simultaneously determine both properties to a precision greater than the uncertainty relation allows [1]. So, if we measure a wave/particles position, its momentum becomes uncertain [2].

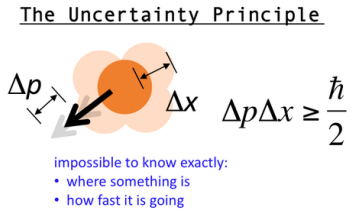

Fig 1: Heisenberg uncertainty principle

Tessellated interpretation: In paper "Certainty Principle Using Complex Plane" [3] it is shown that Heisenberg uncertainty principle only takes into account real component of conjugate pair and hence it was getting uncertainty in its results. But if we consider conjugate pair in terms of complex number we don't get any uncertainty. Which means if we are considering momentum and position of electron we should consider velocity of the electron in complex form because when electrons moves in space it actually oscillates as well in space, this oscillation should not be ignored, as this also carry momentum of electron and similarly position of electron also changes as electron oscillates. If we actually measure position of electron like in single slit experiment we get mix information of momentum in form of oscillation momentum and real momentum of electron. Similarly when we measure momentum of electron which means we are getting real position as well as oscillation position of the electron.

This is same in case when we consider energy and time as conjugate pair, energy of electron is shown as $E = mc^2 + i\hbar\omega$ in paper "Energy equation in complex plane" [4]. Our concept of time is also wrong we consider time as vibration that means electron or atom moving and completing one cycle but we don't take into account internal vibration of electron while calculation time hence when we take time also in complex plane as $\tau = t_r + it_i$, we get no uncertainty in terms of energy and time.

In short in quantum world all these parameters like position, time, energy, momentum etc. are complex numbers because its value gets comparable to internal oscillations of particles and in real world these internal vibration is almost negligible and hence real (or imaginary when antimatter) values of these parameters is enough to get desired results.

III. WAVE PARTICLE DUALITY

Because of the difference of views of Bohr and Heisenberg, the main sources of the so-called Copenhagen interpretation, the position of that interpretation on wave–particle duality is ill-defined.

Tessellated interpretation: Energy of electron is shown as $E = mc^2 + i\hbar\omega$ in paper "Energy equation in complex plane" [4] and energy equation of positron is $E = \hbar\omega + imc^2$. From above two equations it is clear that mc^2 is associated with particle nature and $\hbar\omega$ is wave nature of the particle. In short matter is both particle like and wave like simultaneously. Electron particle nature can be viewed as stationary waves. When you put a vibrating object in surface of water one can see ripples in water travelling outwards. Similarly when electron or positron vibrates in space it send a ripple across space , this ripple is due to compression and expansion of quantized space, arranged in tessellate form as explained in "Fine structure decoded" [5]. Quantized

space is made up real and imaginary space stacked together (shown in Fig 2). These ripples of waves actually are the pilot waves.

Fig 2: Quantized space

IV. DOUBLE SLIT EXPERIMENT DECODED

When electron is bombarded one at a time on two slit experiment (see Fig 3) we get following pattern (see Fig 3)

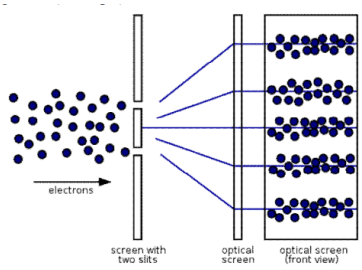

Fig 3: Two slit experiment output
Quantum mechanics do not explain properly why this interference pattern is created.

Tessellated interpretation: When electron moves through space it actually disturbs the space due to its vibration (ripples). This vibration pass through both the slits and they create interference pattern (hence when we close one slit we don't see interference pattern). When electron moves through one the slit it passes through vibrations of quantized space. Electron chooses least resistant path and creates interference pattern [6].

But when we detect electron after it passes through one the slit there is no interference pattern as shown in Fig 4.

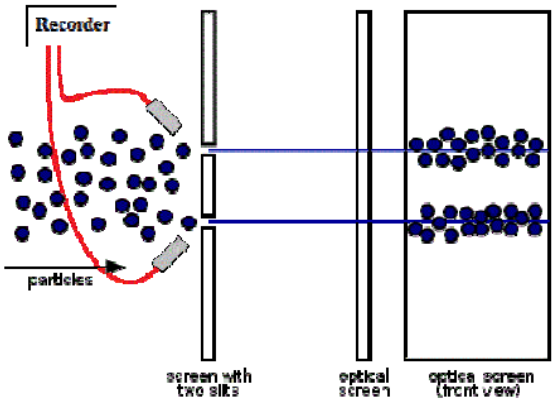

Fig 4: Two slit experiment with detector

This phenomenon was explained by quantum mechanics as wave function collapse. When a photon is bombarded (when we try to detect electron) on electron, photon and electron both the states are modified. This modified state of electron (still having a state) is now not in sync with disturbance in quantized space and hence it is not much affected by it, hence we see no interference pattern when we detect electron.

V. SUPERPOSITION

Superposition is quantum mechanics term, which means an electron is in multiple states at once but when we measure this state its wave equation collapse and electron come to one state. Famous thought experiment is Schrödinger cat where cat is supposed to be half dead or alive until we open the box. When we open the box we will see cat is in one state dead or alive.

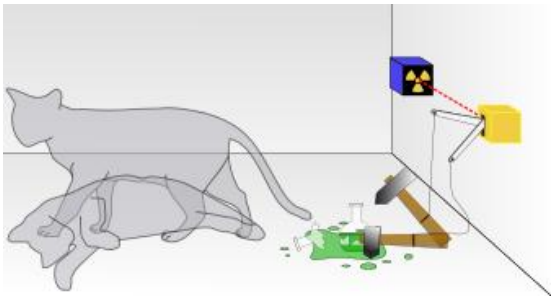

Fig 5: Schrödinger cat

Tessellated interpretation: As per Tessellated interpretation electron is always in one state in particular moment in terms of complex time. Opening the box in case of Schrödinger cat experiment is equivalent to detecting electron through photons, but if we measure the disturbance of electron in quantized space we will be able to tell in which state electron is without interfering with electron. In case of Schrödinger cat one can measure cats heart beat vibration in quantized space and can determine if cat is alive or dead (this is not equivalent to opening of

box because we are not interfering with internal components inside a box nor we have any slits to observe the cat).

VI. PROBABILITY

When electron is bombarded in double slit experiment, we can't say for sure where electron will hit. Quantum mechanics uses wave equation to explain the probability of where electrons will hit.

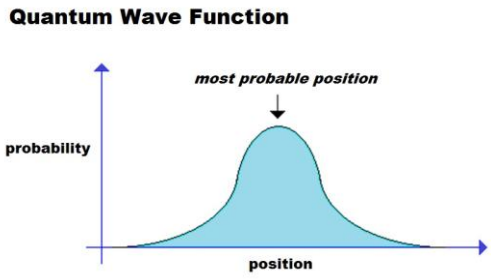

Fig 6: Probability of Finding a Electron in Particular Position

Tessellated interpretation: This uncertainty is arising because we don't have knowledge of initial state of electron (internal vibration), if we somehow know its initial state we can precisely tell where exactly the electron would hit (without breaking the interference). In short probability comes into picture in Quantum mechanics because lack of knowledge of initial states when electron is fired.

VII. QUANTUM ENTANGLEMENT

Quantum mechanics says Quantum entanglement does not violate theory of relativity because you cannot use it for communication, but relativity simply says nothing can travel faster than light (no communication or communication).

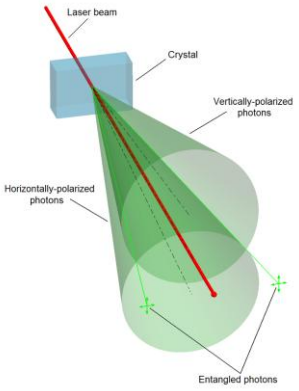

Fig 7: Generation of Entangled Photons

Tessellated interpretation: In paper "Dark matter and Quantum entanglement Decoded" [7], it was shown that entanglement happens because when an entangled pair is created (in adjacent regions), this 2 regions are registered in holographic plates. Even if these entangled pair is very far in current universe, they are close to each other in holographic plates. When there is measurement done in current universe to find out state of first particle, this actually is equivalent for measurement in holographic plane. If first region is modified second region being close to first region, second region states also gets defined. This changes the second pair in our current universe giving an illusion of instantaneous communication between entangled particles. Tessellated interpretation says, as the communication is not happening directly between entangled particles they do not violate relativity of faster than light communication.

VIII. MANY WORLD INTERPRETATION FALSIFIED

TESSELLATED INTERPRETATION: The many-worlds interpretation is an interpretation of quantum mechanics that asserts the objective reality of the universal wave function and denies the actuality of wave function collapse. Many-worlds imply that all possible alternate histories and futures are real, each representing an actual "world" (or "universe"). In lay terms, the hypothesis states there is a very large—perhaps infinite[8]—number of universes, and everything that could possibly have happened in our past, but did not, has occurred in the past of some other universe or universes..

Fig 8: Many world interpretation

But initially it was shown that electron do not chose its path randomly neither it has many routes it actually takes the best route.
Suppose we conduct a double slit experiment and we assume to get desired result as shown in Fig 8.

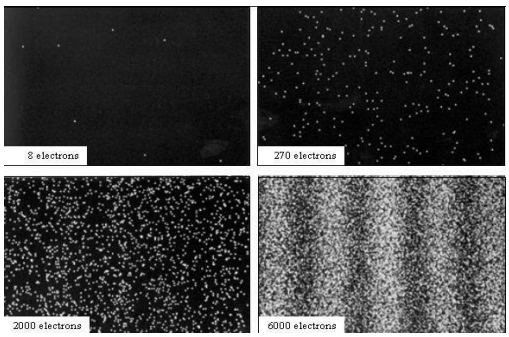

Fig 9: Interference Pattern of Electron in Double Slit Experiment

From Fig 9 we can see there are 5 bands, now suppose after each electron hit, electron took all possible route in 5 different universes and hit specific bands. From this just consider the electron which took central band route. Now repeat this experiment with another electron again it the end chose the universe in which electron chose the middle band. Repeat this process for all the 600 electrons in the experiment. At the end there will one universe with all electrons hitting only middle band, thus this universe will not see interference pattern like we observed in Fig 9. Now suppose someone else or same experiment is conducted still we will have a universe where there were no interference pattern produced. This means this universe will never come to know that there is wave particle duality, which doesn't makes sense and hence many world interpretation is wrong.

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