

Local Hidden Variable Theory of Quantum Mechanics that Violates Bell's Inequality

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Abstract

In this paper the mystery of local hidden variable theory of quantum mechanics that violates Bell's inequality is proposed. These 'hidden variables' are fundamentally inaccessible to physical experiments. It is not something physicists ever dreamed of.

Introduction

Many physicists, including Albert Einstein, were uncomfortable with the standard interpretation of quantum mechanics. The most compelling alternative theory had been the hidden variable theory. However, no such theory has ever been developed successfully. Eventually this theory was largely abandoned in the mainstream because of Bell's theorem which disproved all local hidden variable theories. In this paper, I present a new local hidden variable theory that is not disproved by Bell's theorem.

A new local hidden variable theory that violates Bell's theorem

Consider a pair of entangled electrons that are sent in opposite directions to distant detectors where their spins about three different axes can be measured. Suppose that the spin of each electron can be measured about three different axes by passing it through a magnetic field that can be set to one of the three orientations. According to quantum mechanics, if the spin of an electron about one axis is measured, its spin about the other two axes will be indeterminate. However, according to local hidden variable theory, the spin of an electron about the three axes is predetermined at the source. According to Bell's theorem, if the spin of each electron is measured at the two detectors, with the axis of measurement selected independently at random at each detector, the correlation of the outcomes at the two detectors predicted by local hidden variable theory is lower than that predicted by quantum mechanics, thereby disproving local hidden variable theories.

I propose the mystery behind the local 'hidden variable' that is behind all quantum phenomena as follows:

God has a foreknowledge of which axis is/ will be chosen at each detector for measuring the spin of the electron for each experiment and therefore He fine-tunes the internal dynamics of each electron [1] at the source in such a way that the correlation between the measurements at the two detectors is as predicted by quantum mechanics.

Therefore, this theory is not disproved by Bell's theorem although it is a kind of local 'hidden variable' theory.

Thanks to Almighty God Jesus Christ and His Mother Our Lady Saint Virgin Mary

References

1. *Exploration of a Theory of Everything*, by Henok Tadesse
<https://vixra.org/pdf/2301.0023v2.pdf>