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Short communication

About entanglement of elementary particles of physics

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The entanglement of particles occurs when the first particle still influences the second particle after the end of the coupling process. Coupling means "touching" each other. The second particle is taken away and the spinning of the first is varied while the second particle changes spin. Repetition of effects does cause casualty. The particles are said to be correlated. The explanation could be that the second particle is still at the moment it touches the first because it uses its orthogonal time since the coupling.

Keywords: Particles, axiom, entanglement

INTRODUCTION

The subject of space and time of elementary particles is at the intersection of physics, mathematics and philosophy of science. It was not approached before because we are in an age of partitioning, also because conjectures are not welcome, only evidence is. What is difficult to understand in the subject is the mathematical axiom of choice of set theory as it is applied or rather its negation. The existence of a second component of time at the level of elementary particles is an idea which did not occur to me directly. I started by trying to explain the Big Bang in quantum cosmology by introducing more mathematics for time and starting from the basics. That was some 15 years ago while working in a company and corresponding with Mr Andreas Blass. The existence of the Big Bang still meets undue skepticism with some people. The existence of the Big Bang is deduced by me from the existence of a Big Crunch (collapsing) as the Big Bang follows the Big Crunch, and my idea of space and time at the level of elementary is checked by the existence of the Big Bang.

The Big Bang following a Big Crunch is an idea quickly considered in 1930 by Einstein who did not look for arguments. My argument is from mathematical modeling or rather mathematical explanation as space and time are treated as mathematical variables. The subject can be applied to teleportation of elementary particles and then to groups of elementary particles. Teleportation here is a situation where particles are not replaced by others with the same characteristics in the process. That is the most interesting part for physicists but most of it is still in preparation in September, 2017.

Existence of an orthogonal time for a particle

Let Ui be a countable family of non-empty sets of ur-elements (non-sets), the negation of the axiom of choice implies that the Cartesian product of the family is empty. For an infinite family of non-empty sets, an equivalent of the axiom of choice: A1xA2xA3x... is not empty, we will see that it could be a set of paths. Space and time are sets of ur-elements of the negation of the mathematical axiom of choice. There is an orthogonal time for a particle; orthogonal being defined by the smallest distance to the first axis. That time is a set of ur-elements in quantum cosmology implies that is the case in quantum mechanics. The number of ur-elements between 2 moments makes it possible to define a distance. The least distance to a horizontal axis, time at our level, allows to define an orthogonal time. To write that time has 2 components is to make an approximation. Mr Izhak Bars introduces a second component of time from the point of view of a formalism.

Two particles entanglement

The entanglement of particles occurs when the first still influences the other after the end of the coupling. Coupled means "touching" each other. The other is taken away and the spin of the first is changed, the spin of the other changes also. Repetition of effects causes causality. The particles are said to be correlated. The entanglement of particles was forecasted by Einstein in 1935.

Role of time

The explanation could be that the second particle is still at the moment she touches the first because it uses her orthogonal time since the coupling. It seems there is no change or change to expect for the particle in orthogonal time. How is the orthogonal time different from the TIME at our level? We cannot act on the particle during orthogonal time and maybe it is something that can be (may be) useful.

Axiom of choice applied to physics

I think that no particular case of the axiom of choice is true in physics but I am not quite sure. Axiom of choice for a countable family of sets of number of elements between 2 and m included, that is CC (2 through m). Let us assume as an approximation that CC (2 through m) holds for m<=n, n being the number of locations of particles in the universe at a given time. The Big Crunch occurs. So CC (2 trough n-1) could hold but not CC(2 through n), in physics, not like on mathematics. We have as a limit of a theoretical case (purely theoretical): a particle moves the fastest with the negation of the axiom of choice. Using the countable axiom of choice for a family of sets of n elements , n from 2 to m, when the particle has less potential moves (locations are the elements, m locations, m weak), it moves faster. That is consistent with what we are looking for, a particle moving in no time.

About experimenting

Let us try to describe an experiment where a proton travels a distance in a given time and another experiment where it travels the same distance in no time. After the coupling of 2 protons, the proton which is taken away should instead be left moving by itself. The particle could teleport itself without it being a teleportation of information only.

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