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Does the Wavefunction Act as a Magnetic Potential?

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Abstract: *After exhaustive research in the theoretical foundations of quantum mechanics we try to explain what the wavefunction might be.*

Keywords: wavefunction, act, magnetic potential

INTRODUCTION

The question posed in the title of this short article is the result of 30 years of research of the author and 30 published scientific papers. As we are not yet certain of what the wavefunction represents we have to expose some of the results of this research.

Mass induces a curvature in spacetime creating a volume for the particle. However, the value of the volume enters through an imaginary term in the microworld. We believe we need a fifth dimension as was first claimed by Kaluza Klein on which theory later on the possible existence of magnetic monopoles was based upon. This curvature is independent of the gravitational one. In fact, relativity claims that every sort of Energy curves spacetime. We have thus found also a relativistic pressure. We also believe that spacetime may be of fluid nature.

The discovery of matrix mechanics happened at the same time with the first discoveries on superconductivity. Superconductivity yielded the quantum of flux and the possible shielding against a magnetic field. Those were the first clues in hand back then. Superconductivity may also be described by virtual magnetic monopoles.

Main part

The wavefunction psi may be the potential of the magnetic monopole. Psi star for the north and psi for the South. The solid angles Omega is its charge. More simply psi could be attributed to the

long seeked magnetic potential [1]. When thinking of the wavefunction as a potential one should bear in mind the equivalent of monopole for solids in which the source which is the monopole becomes the sink alternatively. Bothe the source psi and the sink psi star are located at the same point. It is like a spherical surface pulsating creating longitudinal waves.

In Dirac notation >< denotes the light cone formed between a ket and a bra. The past is dark and the future is bright. Between stands the magnetic monopoles within the walls forming the hypersurface of simultaneity. The hat upon the operator brings the shadow. This is depicted in the yin yang symbol.

The radius squared commutes with L the angular momentum. Recent [2,3] researches have proved that it is a conserved quantity in the sense that all radial potentials commute with it. For the less specialized reader if two quantities commute they can be measured simultaneously . From the Newtonian multipole expansion we know that every electric potential can be derived from the action of differential operators on the radial potential of a single charge. Since every observable quantity is derived from the action of differential operators on psi, the wavefunction, we may assume that it is about a kind of potential.

The possible momentarily transformation of mass to magnetic monopoles gives rise , as we have proved in our research to a whole thermodynamic formalism resulting from curvature induced by mass in spacetime as well. The reader may refer to De Broglie ‘s research for short[4]. After psi also comes the big thermodynamic potential Omega=-PV .

CONCLUSIONS

We have given exact equation for the transformation of mass to monopole antimonopole pairs [5]. However, there are a lot of questions still open

Dirrac[6] discusses the line of communication of two magnetic monopoles or between a magnetic monopole and infinity if they are said to exist within a string. The Greek word for a thin string is psili which is one of the reasons psi was chosen as a symbol. This string carries the magnetic flux. We have not given thus final answers

We hope we have contributed to the field of research in the hidden variables of quantum mechanics and we hope there will be more answers as in the year 2025 we celebrate 100 years of the quantum discovery.

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