

Comment on INCOMPATIBILITY OF THE COPENHAGEN INTERPRETATION WITH QUANTUM MECHANICS FORMALISM

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The problem of the interpretation of quantum mechanical quantities is a long standing problem of physics. Although the majority of physicists accept the Copenhagen interpretation, which leads to the probabilistic character of quantum mechanical description, the problem is still discussed both by physicists and philosophers.

For example, on the web page of Murray Gell-Mann www.santafe.edu/research/publications/workingpapers/97-09-079.pdf we may find such a statement:

"Quantum mechanics is correct. The formulation and interpretation of quantum mechanics are still undergoing some necessary evolution, especially in order to accommodate quantum cosmology in a comfortable way, but the basic character of quantum mechanics has always been the same and we may suppose it will remain unchanged."

The Author's paper raises the problem of interpretation of quantum mechanics once again. His discussion is based on the similarity

Comment

between the classical action integral for a statistical ensemble of free particles (or the action integral of an ideal fluid without pressure) and the action integral for the free Schroedinger particle. On this observation he makes the conclusion that the wave function does not describe a single particle what contradicts the Copenhagen interpretation of quantum mechanics.

However, in my opinion the paper is far to be complete and therefore it is not very convincing. Also, the list of references is not too representative to the present status of the problem. For example, it is very strange that there is no reference to the numerous papers of Louis de Broglie, one of the founders of quantum mechanics, who many years advocated the Copenhagen interpretation of quantum mechanics and later on who refused it developing his pilot wave approach.