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## Nonlinear quantum mechanics: A necessary result of development of quantum mechanics

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In this paper we investigated the problem of the nonlinear quantum mechanics. It contains the following problems: 1. the establishment of quantum mechanics and its fundamental postulates, 2. quantum mechanics is a linear and wave theory, it cannot describe the real properties of microscopic particles, 3. the results obtained from quantum mechanics are contradicting with experimental values, 4. the difficulties and contradictions of quantum mechanics cannot be eliminated in itself framework, 5. disputations for the difficulties and contradictions of quantum mechanics in physic, 6. the roots of the difficulties of quantum mechanics and their shortcomings, 7. the direction of development of quantum mechanics, 8. the nonlinear quantum mechanics eliminates thoroughly the difficulties and contradictions of quantum mechanics and give the wave-corpuscle duality of microscopic particles and 9. the establishment of nonlinear quantum is a necessary result of development of quantum mechanics and its basic contents. From these investigations, we abstained the following conclusions: (1) The quantum mechanics is a linear and wave theory, it cannot be used to describe correctly the real proprieties of microscopic particles. (2) The wave feature of microscopic particles is produced by the dispersing effect of the kinetic term in the dynamic equation or in the Hamiltonian operator in quantum mechanics. (3) We can affirm that the difficulties and contradictions of quantum mechanics are widely existed in quantum mechanics and cannot be eliminated in quantum mechanical framework no matter how. (4) We confirmed also that the difficulties and contradiction of quantum mechanics can eliminated thoroughly by using the nonlinear quantum mechanics. The nonlinear quantum mechanics is a necessary result of development of quantum mechanics. The nonlinear theory of quantum mechanics can be used widely in physics.

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