

Quantum systems control and constructive methods of the optimal control theory

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Abstract

Problem of the quantum systems control is a scientific problem of present interest related to modern physical technologies. The control object is the microscopic state of atoms and molecules, and the control instrument is an electrical field. Mathematical theory of the quantum systems control is based on some ideas of the optimal control theory, related to nonlocal iterative methods of the control optimization. Here these ideas are analyzed and developed as applied to special properties of these systems