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Yutaka Shikano* (yutaka.shikano@keio.jp), 3-14-1 Hiyoshi, Kohoku, Yokohama, Kanagawa 223-8522, Japan. *On Quantum Phase Estimation Algorithm in Quantum Chemistry Calculation*. Preliminary report.

The electronic ground state of molecules can be calculated by the quantum computer via the quantum phase estimation algorithm. This algorithm is now attracted as the useful application of quantum computers. Recently, the superconducting-qubit type and optical-type quantum computers can computer the small-size molecules. We discuss the detailed analysis on quantum estimation method in quantum chemistry calculation. We show the relationship between the error of the algorithm itself and the gate complexity.

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