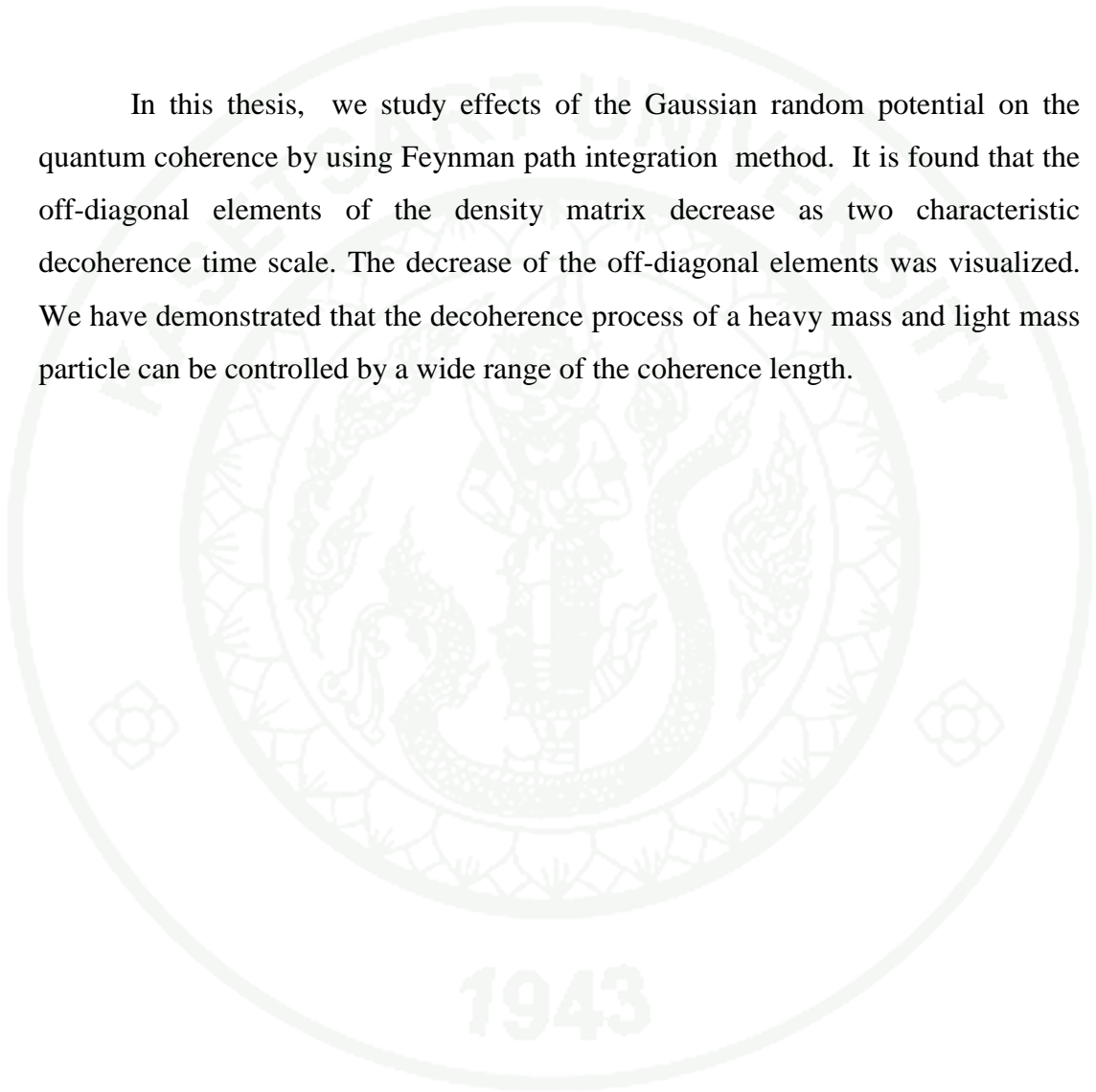


Samak Boonpan 2012 : The Loss of Quantum Coherence Induced by Gaussian Random Potential. Master of Science (Physics), Major Field: Physics, Department of Physics. Thesis Advisor: Associate Professor Sutee Boonchui, Ph.D. 50 pages.

In this thesis, we study effects of the Gaussian random potential on the quantum coherence by using Feynman path integration method. It is found that the off-diagonal elements of the density matrix decrease as two characteristic decoherence time scale. The decrease of the off-diagonal elements was visualized. We have demonstrated that the decoherence process of a heavy mass and light mass particle can be controlled by a wide range of the coherence length.



Student's signature

Thesis Advisor's signature

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