

THE DEMONSTRATION OF SIMPLE QUANTUM MECHANICAL SYSTEMS  
BY  
ANALOGUE COMPUTER



by

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#### ABSTRACT

The purpose of this thesis is to describe the method for demonstrating solutions of the time independent Schrödinger equation in one-dimension for various potential fields, such as constant potential, potential step, potential barrier and potential well.

The Schrödinger equation for a constant potential was solved on the Heath Analogue Computer in the Faculty of Engineering, Chulalongkorn University. In the other cases this Heath Analogue Computer could not be used because the absence of a function generator and a multiplier prevented me from actually demonstrating the solutions of the other problems mentioned above. However Schrödinger's equations for the potential step, the potential barrier and the potential well are discussed, including the computer circuit and the method for solving them.

It is concluded that the analogue computer is a powerful teaching aid for demonstrating wave functions in Quantum Mechanics visually without the necessity of detailed and tedious mathematical analysis.

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