THE DEMONSTRATION OF SIMPLE QUANTUM MECHANICAL SYSTEMS

BY

ANALOGUE COMPUTER

by

Captain Medha Sookavari

B.Sc., Air Academy (R.T.A.F.), 1959, Dip. in Ed..

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Dean of the Graduate School

Thesis Committee ........S. Tanbunyuen........ Chairman

................RHB Crell................

............Sippanandha Ketudat............

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Thesis Supervisor ....RHB Crell................
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Thesis Title ..THE DEMONSTRATION OF SIMPLE QUANTUM MECHANICAL

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Name Capt. Hedha Scokavari Department Mathematics.... ...

Date........ ....March, 1965.

## 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, poten-
tial 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 pre-
vented 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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## ACKNOWLEDGEMENTS

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