QUANTUM PHYSICS

NUMERICAR SOLUTION FOR SOLVE SIMPLE PROBLEM WITH JAVA

INTRODUCTION

- Microscopic dynamics for non-relativistic quantum systems are described by the Schrodinger equation
- Recently, the finite difference time domain (FDTD) method has been applied for solving the Schrodinger equation
- In principle, the FDTD method can yield all the eigenvalues and eigenfunctions of the problem

REFRENCE

- Theory : Serway, Raymond A. *Modern physics*.
- Numerik : Sudiarta, I. Wayan. Solving the Schrödinger equation using the finite difference time domain method.
- Java : Wolfgang Christian. An Introduction to Computer Simulation Methods Applications to Physical System.

- Sudiarta, I. Wayan, and DJ Wallace Geldart. "Solving the Schrödinger equation using the finite difference time domain method." *Journal of Physics A: Mathematical and Theoretical* 40.8 (2007): 1885.
- Serway, Raymond A., Clement J. Moses, and Curt A. Moyer. *Modern physics*. Cengage Learning, 2004.
- Jørgensen, Loren, David Lopes Cardozo, and Etienne Thibierge. "Numerical Resolution Of The Schrödinger Equation." (2011).
- Gould, Harvey, Jan Tobochnik, and Wolfgang Christian. *An introduction to computer simulation methods*. Vol. 1. New York: Addison-Wesley, 1988.