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1: Overview of Time-Independent Quantum Mechanics

2: Introduction to Time-Dependent Quantum Mechanics
3: Time-Evolution Operator

\[ |\ell\rangle \longrightarrow \rightarrow \rightarrow \rightarrow \rightarrow |k\rangle \]

- 4: Irreversible Relaxation

\[ \rho_{nm} \]

- 5: The Density Matrix

\[ |\beta\rangle \quad |\alpha\rangle \quad |a\rangle \quad |b\rangle \]

- 6: Adiabatic Approximation

\[ \bar{W}_{nk} \]

- 7: Interaction of Light and Matter
8: Mixed States and the Density Matrix

9: Irreversible and Random Processes

10: Time-Correlation Functions

11: Linear Response Theory
12: Time-domain Description of Spectroscopy

13: Coupling of Electronic and Nuclear Motion

14: Fluctuations in Spectroscopy

15: Energy and Charge Transfer
16: Quantum Relaxation Processes

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