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- Front Matter

- 1: Overview of Time-Independent Quantum Mechanics

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

\[ |\ell\rangle \quad \rightarrow \quad \cdots \quad \rightarrow \quad |k\rangle \]

- 4: Irreversible Relaxation

- 5: The Density Matrix

- 6: Adiabatic Approximation

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

\[ A_i(t) \]

\[ \langle A \rangle \]

\textbf{9: Irreversible and Random Processes}

![Graph showing correlation functions](image)

\textbf{10: Time-Correlation Functions}

![Graph showing correlation functions](image)

\textbf{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

- System
- Bath

Q

\[ q_\alpha \]
\[ q_\beta \]
\[ q_\gamma \]
\[ q_\delta \]

- Back Matter