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Nota di contenuto	ch. 1. Introduction: what is "nonadiabatic transition"? -- ch. 2. Multi-disciplinarity. 2.1. Physics. 2.2. Chemistry. 2.3. Biology. 2.4. Economics -- ch. 3. Historical survey of theoretical studies. 3.1. Landau-Zener-Stueckelberg theory. 3.2. Rosen-Zener-Demkov theory. 3.3. Nikitin's exponential model. 3.4. Nonadiabatic transition due to Coriolis coupling and dynamical state representation -- ch. 4. Background mathematics. 4.1. Wentzel-Kramers-Brillouin semiclassical theory. 4.2. Stokes phenomenon -- ch. 5. Basic two-state theory for time-independent processes. 5.1. Exact solutions of the linear curve crossing problems. 5.2. Complete semiclassical solutions of general curve crossing problems. 5.3. Non-curve-crossing case. 5.4. Exponential potential model. 5.5. Mathematical implications -- ch. 6. Basic two-state theory for time-dependent processes. 6.1. Exact solution of quadratic potential problem. 6.2. Semiclassical solution in general case. 6.3. Other exactly solvable models -- ch. 7. Two-state problems. 7.1. Diagrammatic technique. 7.2. Inelastic scattering. 7.3. Elastic scattering with resonances and predissociation. 7.4. Perturbed bound states. 7.5. Time-dependent periodic crossing problems -- ch. 8. Effects of dissipation and fluctuation -- ch. 9. Multi-channel problems. 9.1. Exactly solvable models. 9.2. Semiclassical theory of time-independent multi-channel problems. 9.3. Time-dependent problems -- ch. 10. Multi-dimensional problems. 10.1. Classification of surface crossing.

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Sommario/riassunto

An exploration of the concepts, basic theories and applications of nonadiabatic transition. Nonadiabatic transition is a multidisciplinary concept and phenomenon, constituting a fundamental mechanism of state and phase changes in various dynamical processes of physics, chemistry and biology.