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	Methods. 8.1 Configuration Interaction. 8.2 Multiconfiguration Self- consistent-field. 8.3 Møller-Plesset Theory. 8.4 The MP2-R12 Method. 8.5 The CC-R12 Method. 8.6 Density Functional Theory. 9. Valence Bond Theory and the Chemical Bond. 9.1 The Born- Oppenheimer Approximation. 9.2 The Hydrogen Molecule H 2 . 9.3 The Origin of the Chemical Bond. 9.4 Valence Bond Theory and the Chemical Bond. 9.5 Hybridization and Molecular Structure. 9.6 Pauling's Formula for Conjugated and Aromatic Hydrocarbons. 10. Elements of Rayleigh-Schroedinger Perturbation Theory. 10.1 Rayleigh- Schroedinger Perturbation Equations. 10.2 First-order Theory. 10.3 Second-order Theory. 10.4 Approximate E 2 Calculations: The Hylleraas Functional. 10.5 Linear Pseudostates and Molecular Properties. 10.6 Quantum Theory of Magnetic Susceptibilities. 11. Atomic and Molecular Interactions. 11.1 The H-H Nonexpanded Interactions up to Second Order. 11.2 The H-H Expanded Interactions up to Second Order. 11.3 Molecular Interactions. 11.4 Van der Waals and Hydrogen Bonds. 11.5 The Keesom Interaction. 12. Symmetry. 12.1 Molecular Symmetry. 12.2 Group Theoretical Methods. 12.3 Illustrative Examples. References. Author Index. Subject Index .
Sommario/riassunto	This provides an advanced text introducing graduate students to the mathematical foundations of methods needed to do working applications in molecular quantum mechanics.