THE SPECTRA AND DYNAMICS OF DIATOMIC MOLECULES

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A revised and significantly expanded version of "Perturbations in the Spectra of Diatomic Molecules" (Academic, 1986) is now available from Elsevier. The chapter titles are: 1. Simple Spectra and Standard Experimental Techniques, 2. Basic Models, 3. Terms Neglected in the Born-Oppenheimer Approximation, 4. Methods of Deperturbation, 5. Interpretation of the Perturbation Matrix Elements, 6. Transition Intensities and Special Effects, 7. Photodissociation Dynamics, 8. Photoionization Dynamics, 9. Dynamics. Chapters 2-8 contain all of the material in "Perturbations…" (corrected and updated), but major new topics have been added to Chapters 3, 6, 7, and 8. Examples include a more complete treatment of Hund's cases, a discussion of electromagnetic field dressed adiabatic states, expansions of the chapters on predissociation and autoionization to include direct photofragmentation (dissociation and ionization) processes, and a discussion of coherent control. Chapters 1 and 9 are entirely new. The book concludes with a long section that extends the concepts, tools, and visualization techniques *beyond diatomic molecules* to larger molecules. This book is written for beginning graduate students, users of spectra and spectroscopic data, and for experts, both experimentalists and theorists.