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Titolo	Collisional line broadening and shifting of atmospheric gases [[electronic resource]] : a practical guide for line shape modeling by current semi-classical approaches // Jeanna Buldyreva, Nina Lavrentieva, Vitaly Starikov
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Altri autori (Persone)	LavrentievaNina StarikovVitaly
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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Preface; Contents; Chapter 1 Basic definitions; Chapter 2 Semi-classical calculation of pressure-broadened line widths and pressure-induced line shifts; Chapter 3 Collisional broadening of water vapour lines; Chapter 4 Pressure broadening and shifting of vibrotational lines of atmospheric gases; Appendix A Matrix elements of operators of physical quantities; Appendix B Parameters of intermolecular interaction potentials; Appendix C Relations used in calculation of resonance functions; Appendix D Second-order contributions from atom-atom potential in the parabolic trajectory model Appendix E Resonance functions in the parabolic trajectory modelAppendix F Resonance functions in the exact trajectory model; Index
Sommario/riassunto	This book presents a comprehensive overview of the modern theory of spectral line broadening and shifting by pressure of atmospheric gases. It describes current semi-classical methods for calculating vibrotational line widths and shifts, including very recent modifications and new developments realised by the authors themselves. For most of the

considered molecular systems, analytical formulae are also given, which enable the calculation of line broadening coefficients without the use of semi-classical methods. The results of calculations by various approaches are compared with experimental da
