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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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   Disciplina   522.67

   Soggetti   Collision broadening
                        Gases
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   Lingua di pubblicazione   Inglese

   Formato   Materiale a stampa

   Livello bibliografico   Monografia

   Note generali   Description based upon print version of record.

   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