1. Record Nr. UNINA9910784016803321 Autore Sanna Giovanni Titolo Introduction to molecular beams gas dynamics [[electronic resource] /] / Giovanni Sanna, Giuseppe Tomassetti Pubbl/distr/stampa London, : Imperial College Press Hackensack, NJ,: Distributed by World Scientific, c2005 **ISBN** 1-281-86701-2 9786611867010 1-86094-740-9 Descrizione fisica 1 online resource (402 p.) Altri autori (Persone) TomassettiGiuseppe 533.275 Disciplina 533/.2 Soggetti Gas dynamics Molecular beams 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. Preface: CONTENTS: CHAPTER 1 Gas Properties: CHAPTER 2 The Non-Nota di contenuto Equilibrium Equations and the Relaxation of the Internal Degrees of Freedom; CHAPTER 3 The Fundamental Equations of Gas Dynamics; CHAPTER 4 Isoentropic Flow, Characteristic Lines: CHAPTER 5 The Method of Characteristics; CHAPTER 6 The Shock Waves; CHAPTER 7 The Flow in Nozzles and Jets; CHAPTER 8 The Supersonic Free Jet; CHAPTER 9 Application of the Boltzmann Equation to a Jet of Monatomic Gas; CHAPTER 10 Characterisation of a Particle Source and Extraction of the Molecular Beam CHAPTER 11 The Condensation in a Supersonic Free JetCHAPTER 12 Some Different Topics; Appendix A.1 Different Forms of Eq. (1.2.2); Appendix A.2 Intermolecular Potential Energy; Appendix A.3 Molecular Energy Levels; Appendix B.1 Deduction of Eqs. (2.5.8; 9; 10); Appendix C.1 Deduction of Eqs. (3.9.10; 13); Appendix C.2 Alternative Deduction of the Bernoulli Equation; Appendix D.1 Use of the Prandtl-Meyer Function in the Method of Characteristics; Appendix D.2 Planar Flow

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## Sommario/riassunto

Introduction to Molecular Beams Gas Dynamics is devoted to the theory and phenomenology of supersonic molecular beams. The book describes the main physical idea and mathematical methods of the gas dynamics of molecular beams, while the detailed derivation of results and equations is accompanied by an explanation of their physical meaning. The phenomenology of supersonic beams can appear complex to those not experienced in supersonic gas dynamics and the few existing reviews on the topic generally presume specific knowledge of the subject. The book begins with a quantitative description of the