UNINA9910457219203321
Rarefied gas dynamics [[electronic resource]] : space-related studies / / edited by E.P. Muntz, D.P. Weaver, D.H. Campbell
Washington, D.C., : American Institute of Aeronautics and Astronautics, Inc., c1989
1-60086-590-9 1-60086-371-X
1 online resource (583 p.)
Progress in astronautics and aeronautics ; ; v. 116
MuntzE. Phillip <1934-> (Eric Phillip) WeaverD. P CampbellD. H (David H.)
629.1 s 629.132/3
Rarefied gas dynamics Space sciences Electronic books.
Inglese
Materiale a stampa
Monografia
"Technical papers selected from the sixteenth International Symposium on Rarefied Gas Dynamics, Pasadena, California, July 10-16, 1988, subsequently revised for this volume."
Includes bibliographical references and index.
""Cover""; ""Title""; ""Copyright""; ""Table of Contents""; ""Preface""; ""Chapter I. Rarefied Atmospheres""; ""Nonequilibrium Nature of Ion Distribution Functions in the High Latitude Auroral Ionosphere""; ""VEGA Spacecraft Aerodynamics in the Gas-Dust Rarefied Atmosphere of Halley's Comet""; ""Oscillations of a Tethered Satellite of Small Mass due to Aerodynamic Drag""; ""Chapter II. Plasmas""; ""Semiclassical Approach to Atomic and Molecular Interactions""; ""Monte Carlo Simulation of Electron Swarm in a Strong Magnetic Field"" ""Collisional Transport in Magnetoplasmas in the Presence of Differential Rotation""""Electron Oscillations, Landau, and Collisional Damping in a Partially Ionized Plasma"; ""Bifurcating Families of Periodic Traveling Waves in Rarefied Plasmas""; ""Chapter III. Atomic Oxygen Generation and Effects""; ""Laboratory Simulations of Energetic Atom Interactions Occurring in Low Earth Orbit""; ""High-

Energy/Intensity CW Atomic Oxygen Beam Source""; ""Development of a Low-Power, High Velocity Atomic Oxygen Source""; ""Options for Generating Greater Than 5-eV Atmospheric Species"" "Laboratory Results for 5-eV Oxygen Atoms on Selected Spacecraft Materials"""Chapter IV. Plumes""; ""Modeling Free Molecular Plume Flow and Impingement by an Ellipsoidal Distribution Function""; ""Plume Shape Optimization of Small Attitude Control Thrusters Concerning Impingement and Thrust"; ""Backscatter Contamination Analysis""; "Thruster Plume Impingement Forces Measured in a Vacuum Chamber and Conversion to Real Flight Conditions""; ""Neutralization of a 50-MeV H~Beam Using the Ring Nozzle"; ""Chapter V. Tube Flow"" ""Rarefied Gas Flow Through Rectangular Tubes: Experimental and Numerical Investigation""""Experimental Investigation of Rarefied Flow Through Tubes of Various Surface Properties""; ""Monte Carlo Simulation on Mass Flow Reduction due to Roughness of a Slit Surface""; ""Chapter VI. Expansion Flowfields""; ""Translational Nonequilibrium Effects in Expansion Flows of Argon""; ""Three-Dimensional Freejet Flow from a Finite Length Slit""; ""Modification of the Simons Model for Calculation of Nonradial Expansion Plumes""; ""Simulation of Multicomponent Nozzle Flows into a Vacuum"" ""Kinetic Theory Model for the Flow of a Simple Gas from a Two-Dimensional Nozzle"""Transient and Steady Inertially Tethered Clouds of Gas in a Vacuum""; ""Radially Directed Underexpanded Jet from a Ring-Shaped Nozzle""; ""Three-Dimensional Structures of Interacting Freejets""; ""Flow of a Freejet into a Circular Orifice in a Perpendicular Wall""; ""Chapter VII. Surface Interactions""; ""Particle Surface Interaction in the Orbital Context: A Survey""; ""Sensitivity of Energy Accommodation Modeling of Rarefied Flow Over Re-Entry Vehicle Geometries Using DSMC""

""Determination of Momentum Accommodation from Satellite Orbits: An Alternative Set of Coefficients""