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Descrizione fisica	1 online resource (202 pages)
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Sommario/riassunto	One-of-a-kind resource on theoretical and application aspects of hypersonic slender body aerodynamics with many didactic features included throughout. Developed using class-tested course material, Hypersonic Slender Body Aerodynamics presents the theoretical and application aspects of the subject in a precise, concise, and student-friendly manner. The text includes a large number of worked examples, figures, diagrams, tables, and exercise problems. This book covers the subject material beginning from the definition of the slender body geometry through to the study of flow field around the body and the calculation of the aerodynamic and thermal loads acting on the body at speeds ranging from low to high (i.e., from incompressible to hypersonic speeds). The Mach number independence principle and approximate theories for caret wings are also covered, among many other key topics. This book is unique in its comprehensive coverage of the topic, enabling readers to find information in one place instead of

scattered throughout proprietary wind tunnel test data, flight test data, government technical reports, scientific literature sources, and numerical methods. Some of the concepts explored in Hypersonic Slender Body Aerodynamics include:

- \* Wings of supersonic aircraft, covering sharp leading edges and ground and viscous effects, and pressure distribution on surfaces, covering transverse and longitudinal flow
- \* Hypersonic aerodynamics, covering atmospheric properties, hypersonic-flow characteristics, governing equations, and flow past a semi-wedge
- \* Application of slender-body theory, covering leading-edge heat transfer, sublimation, aerodynamic effects, nose bluntness, blast-wave theory, and thin shock layers
- \* Axisymmetric slender bodies, covering potential flow solutions and pressure distribution, and drag of slender bodies, covering shape factor and blunt after-body corrections

Skillfully written with a clear and engaging writing style, Hypersonic Slender Body Aerodynamics is an essential learning resource on the subject for undergraduate and graduate students of aerospace engineering and practicing engineers working in aerospace research labs and industries. It is a perfect textbook for courses on slender body aerodynamics.

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