

1. Record Nr.	UNINA9910814917203321
Titolo	Viscous drag reduction in boundary layers [[electronic resource] /] / edited by Dennis M. Bushnell, Jerry N. Hefner
Pubbl/distr/stampa	Washington, D.C., : American Institute of Aeronautics and Astronautics, Inc., c1990
ISBN	1-60086-597-6 1-60086-378-7
Descrizione fisica	1 online resource (526 p.)
Collana	Progress in astronautics and aeronautics ; ; v. 123
Altri autori (Persone)	BushnellDennis M HefnerJerry N
Disciplina	629.1 s 629.132/34
Soggetti	Drag (Aerodynamics) Viscous flow Boundary layer
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	""Cover""; ""Title""; ""Copyright""; ""Table of Contents""; ""Preface""; ""Introduction""; ""Laminar Flow Control""; ""Stability Theory for Laminar Flow Control Design""; ""Introduction""; ""Linear Stability Equations""; ""Temporal and Spatial Theories and Computation of Integrated Amplification""; ""Estimation of Transition Onset Using the e[sup(N)] Method""; ""LFC Design Process""; ""Wave Interactions and Other Spoilers""; ""Concluding Remarks""; ""References""; ""Applied Aspects of Laminar-Flow Technology""; ""Nomenclature""; ""Introduction""; ""Aerodynamic Design"" ""Permissible Surface Tolerances""""Fabrication Concepts""; ""Suction Surface Concepts""; ""Operations""; ""Concluding Remarks""; ""References""; ""Status of Transition Delay Using Compliant Walls""; ""Introduction""; ""Types and Theoretical Models of Compliant Walls""; ""Formulation for Flow/Wall Interaction""; ""Types and Mechanisms of Instability""; ""Convective Instabilities""; ""Absolute Instabilities""; ""Predicted Transition Delays""; ""Measurements of Instability Growth""; ""More Advanced Topics""; ""The Way Ahead""; ""References""

""Application of CFD to Reduction of Skin-Friction Drag""
Introduction"; ""Flow-Control Mechanisms for Drag Reduction";
""Calculation of Skin-Friction Drag"; ""Applications"; ""Concluding
Remarks"; ""References"; ""Active Wave Control of Boundary-Layer
Transition"; ""Introduction"; ""Transition Process"; ""Experimental
Studies of Active Control"; ""Numerical and Analytical Studies of Active
Control"; ""Active Feedback Control of Transition"; ""Control of
Interacting Waves"; ""Discussion"; ""Summary"; ""References";
""Passive Turbulent Drag Reduction"; ""Riblets""
""Introduction""""Riblet Concept Formulation"; ""Riblet Drag
Measurements"; ""Influence on Turbulence Structure and Mean Flow";
""Application Aspects"; ""Supersonic Data"; ""Laminar Boundary
Layer"; ""Computational Effort"; ""Compound and Three-Dimensional
Riblets"; ""Riblets Combined with Other Drag-Reduction Techniques";
""New Ideas"; ""Heat Transfer"; ""Conclusions"; ""References";
""Outer-Layer Manipulators for Turbulent Drag Reduction";
""Introduction"; ""Initial IIT and LaRC Studies"; ""C[_{sub(f)}] Measurement
Techniques""
""Optimum Configuration and Geometric Sensitivities""""Turbulence
Modifications and Possible Mechanisms"; ""Concluding Remarks";
""References"; ""Convex Curvature Concept of Viscous Drag
Reduction"; ""Nomenclature"; ""Introduction"; ""General Behavior Due
to Curvature"; ""Application of the Convex Curvature Concept";
""Concluding Remarks"; ""References"; ""Active Turbulent Drag
Reduction"; ""MHD Flow Drag Reduction"; ""Introduction"; ""Weakly
Conducting Fluid Flows"; ""Liquid Metal Flows"; ""Concluding Remarks
and Prospects for Possible Future Research"; ""References""
""Drag Reduction in Liquid Boundary Layers by Gas Injection""
