

1. Record Nr.	UNINA9910789897903321
Titolo	Wind tunnels [[electronic resource]] : aerodynamics, models and experiments / / Justin D. Pereira, editor
Pubbl/distr/stampa	New York, : Nova Science Publishers, c2011
ISBN	1-61942-329-4
Descrizione fisica	1 online resource (241 p.)
Collana	Engineering tools, techniques and tables
Altri autori (Persone)	PereiraJustin D
Disciplina	629.134/52
Soggetti	Wind tunnels Aerodynamics
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	""WIND TUNNELS: AERODYNAMICS, MODELS AND EXPERIMENTS ""; ""WIND TUNNELS: AERODYNAMICS, MODELS AND EXPERIMENTS ""; ""CONTENTS ""; ""PREFACE""; ""DESIGN, EXECUTION AND NUMERICAL REBUILDING OF SHOCK WAVE BOUNDARY LAYER INTERACTION EXPERIMENT IN A PLASMA WIND TUNNEL""; ""ABSTRACT ""; ""1. INTRODUCTION""; ""1.1. EXPERT Capsule ""; ""2. MATHEMATICAL MODEL ""; ""3. PWT SCIROCCO EXPERIMENT PRELIMINARY DESIGN""; ""3.1. PWT a€œSciroccoa€? Facility Description ""; ""3.2. Facility Performance Evaluation ""; ""3.3. Definition of PWT Model""; ""3.3.1. Nose Radius ""; ""3.3.2. Flap Dimensions "" ""3.4. Final Configuration and Materials """"4. EXTRAPOLATION FROM FLIGHT PROCEDURE ""; ""4.1. Facility Operating Conditions ""; ""4.1.1. Pressure and Heat Flux Reference Values""; ""4.1.2. Pressure and Heat Flux Peak Values ""; ""4.1.3. Angle of Attack ""; ""4.2. Definition of the Experimental Conditions ""; ""4.2.1. Point P1-PWT ""; ""4.2.2. Point P2-PWT""; ""5. MODEL THERMO-STRUCTURAL DESIGN ""; ""5.1. Flat Plate ""; ""5.1.1. Thermal Analysis ""; ""5.1.2. Structural Analysis ""; ""5.2. Deflected Flap""; ""5.2.1. Thermal Analysis ""; ""5.2.2. Structural Analysis "" ""5.3. Lower and Lateral Panels """"5.4. Water Cooled Leading Edge ""; ""5.5. Model Frame ""; ""5.6. Final Material Selection ""; ""6. PWT SCIROCCO EXPERIMENT DETAILED DESIGN ""; ""6.1. Computational Grids ""; ""6.2. Two-Dimensional Numerical Results ""; ""6.2.1. Wall Catalycity

Effects ""; ""6.2.2. Nose Temperature Effects ""; ""6.2.3. Base Flow Effects ""; ""6.3. Three-Dimensional Numerical Results ""; ""6.3.1. Condition P2-PWT ""; ""6.4. Model Instrumentation ""; ""7. TEST EXECUTION ""; ""8. POST TEST ANALYSIS AND NUMERICAL REBUILDING"";  
""8.1. Comparison with Pre-Test and Flight Data ""  
""9. CONCLUSION """"REFERENCES ""; ""THE MAINZ VERTICAL WIND TUNNEL FACILITYa€? A REVIEW OF 25 YEARS OF LABORATORY EXPERIMENTS ON CLOUD PHYSICS AND CHEMISTRY ""; ""ABSTRACT "";  
""1. INTRODUCTION ""; ""2. DESCRIPTION OF THE MAINZ VERTICAL WIND TUNNEL ""; ""2.1. History ""; ""2.2. Construction ""; ""2.3. Experiments ""; ""2.3.1. Experiments in Laminar Air Stream""; ""2.3.1.1. Basic Cloud Physical Processes ""; ""Internal Circulation, Shape, and Oscillation of Raindrops ""; ""Collisional Drop Growth and Rimming "";  
""Melting of Snow Flakes ""; ""2.3.1.2. Cloud Chemistry Processes""  
""Scavenging of Sulfur Dioxide by Large and Small Raindrops""""  
Scavenging of Ammonia by Raindrops ""; ""2.3.1.3. Aerosol-Cloud Interactions ""; ""Heterogeneous Drop Freezing in the Immersion and Contact Mode ""; ""Drop-to-Particle Conversion ""; ""Radiation Properties of Polluted Droplets ""; ""2.3.2. Experiments in Turbulent Air Stream ""; ""2.3.2.1. Basic Cloud Physical Processes ""; ""Collisional Drop Growth""; ""2.3.2.2. Cloud Chemistry Processes ""; ""Sulfur Dioxide "";  
""2.3.2.3. Aerosol Cloud Interactions ""; ""Impaction scavenging by water drops ""; ""SUMMARY ""; ""ACKNOWLEDGMENTS ""  
""REFERENCES ""

---