## **Table of Contents**

P. Carrière	Introduction	1
Session l	Interactions in Two-Dimensional Steady Flows	
Chairman : B.E. Lau	nder	
H. Ha Minh D. Vandromme	Modelling of Compressible Turbulent Flows: Present Possibilities and Perspectives (*)	13
D.A. Johnson L.S. King	Transonic Separated Flow Prediction Based on a Mathematically Simple, Nonequilibrium Turbulence Closure Model	27
B. Escande L. Cambier	Turbulence Modeling in Transonic Interactions	39
G. Degrez D. Vandromme	Implicit Navier-Stokes Calculations of Transonic Shock/Turbulent Boundary-Layer Interactions	53
Session 2	Interaction in Two-Dimensional Steady Flows	
Chairman : H. Ha Mi	nh	
T.C. Tai	Strong versus Weak Interaction System for Transonic Flow Computation	67
D.E. Edwards D.L. Whitfield J.E. Carter	Application of Interacting Boundary-Layer Theory in the Analysis of Transonic Shock Induced Separation	79
X. Liu L.C. Squire	The Shock-Wave/Turbulent Boundary-Layer Interaction on Curved Surface at Transonic Speed	93
R. Bohning J. Zierep	Calculation of 2D Turbulent Shock/Boundary Layer Interaction at Curved Surfaces with Suction and Blowing	105
P. Thiede P. Krogmann	Improvement of Transonic Airfoil Performance through Passive Shock/Boundary-Layer Interaction Control	113

Session 3	Interactions in Two-Dimensional Steady Flows	
Chairman : S.M. Bog	donoff	
D. Vandromme H. Ha Minh	Physical Analysis of Turbulent Boundary Layer/ Shock-Wave Interactions Using Second Order Closure Predictions	127
J.L. Brown M.I. Kussoy T.J. Coakley	Turbulent Properties of Axisymmetric Shock-Wave/Boundary-Layer Interaction Flows	137
R.E. Melnik R.L. Cusic M.J. Siclari	An Asymptotic Theory of Supersonic Turbulent Interactions in a Compression Corner	149
D. Aymer de la Chevalerie	Second Order Computation of Shock-Wave/Boundary-Layer Interactions in Curvilinear Co-	165
C.K. Forester I. Strom	Navier-Stokes and Experimental Modeling of Blunt-Base Rocket Nozzle Flow	165 177
Session 4	Interactions in Three-Dimensional Steady Flows	
Chairman : E. Kraus	e	
A.J. Smits S.M. Bogdonoff	A "Preview" of Three-Dimensional Shock-Wave/ Turbulent Boundary-Layer Interactions(*)	191
G.S. Settles	On the Inception Lengths of Swept Shock-Wave/ Turbulent Boundary-Layer Interactions	203
A. Mignosi JB. Dor A. Seraudie	Experimental Study of the Boundary-Layer Separation Conditions through a Shock-Wave on Airfoil and Swept Wing	215
J.L. Fulker P.R. Ashill	A Model of the Flow over Swept Wings with Shock Induced Separation	233
N. Saida	Separation ahead of Blunt Fins in Supersonic Turbulent Boundary-Layers	247
Session 5	Interactions in Three-Dimensional Steady Flows	
Chairman : H. Fernh	olz	
S.M. Bogdonoff	Some Observations of Three-Dimensional Shock-Wave/Turbulent Boundary-Layer Interactions	261
R. Benay T. Pot	Experimental Study of Shock-Wave/Boundary- Layer Interaction in a Three Dimensional	272

A. Rizzi C.J. Purcell J.T. McMurray	Numerical Experiment with Inviscid Vortex—Stretched Flow around a Cranked Delta Wing: Transonic Speed	283
G.R. Inger	Supersonic Viscous-Inviscid Interaction of a Swept Compression Ramp with a Turbulent Boundary-Layer	299
J.D. McLean T.K. Matoi	Shock/Boundary-Layer Interaction Model for Three-Dimensional Transonic Flow Calculations	311
M.S. Holden	Aerothermal Problems Associated with Viscous/ Inviscid Interaction over Hypersonic Flight Vehicles	323
Session 6	Unsteady Aspects of Interaction Phenomena	
Chairman: 0. Leuch	ter	
D.S. Dolling	Unsteadiness of Shock-Wave Induced Turbulent Boundary-Layer Separation. A Review(*)	341
D.G. Mabey P. Lee	Reduction of Low Frequency Buffet from a Bluff Body at Transonic Speeds	359
M.Y. Hussaini F. Collier D.M. Bushnell	Turbulence Alteration due to Shock Motion	371
JP. Dussauge K.C. Muck J. Andreopoulos	Properties of Wall Pressure Fluctuations in a Separated Flow over a Compression Ramp	383
JF. Debiève JP. Lacharme	A Shock-Wave/Free Turbulence Interaction	393
Session 7	Other Aspects of Interaction Flows	
Chairman: 0. Leuch	ter	
L.G. Kaufman II C.B. Johnson	An Overview of some Investigations of Pressure and Thermal Distributions Induced by Trailing Edge Controls on Hypersonic Aircraft	407
S.I. Cheng	Fluid Turbulence : Deterministic or Statistical	419

## (\*) Extended Lecture