Supercritical Wing Sections III

/

Bauer, Frances

Springer Berlin Heidelberg,
1977

Electronic books

Monografía

The purpose of this book is to survey computational flow research on the design and analysis of supercritical wing sections supported by the National Aeronautics and Space Administration at the Energy Research and Development Administration Mathematics and Computing Laboratory of New York University. The work was performed under NASA Grants NGR 33-016-167 and NGR 33-016-201 and ERDA Contract EY-76-C-02-3077. Computer programs to be listed and described have applications in the study of flight of modern aircraft at high sub- sonic speeds. One of the codes generates cascades of shockless tran- sonic airfoi~s that are expected to increase significantly the effici- ency of compressors and turbines. Good simulation of physically observed flows has been achieved. This work is a sequel to two earlier books [1,2] published by Springer-Verlag under similar titles that we shall refer to as Volumes I and II. New York November 1977 TABLE OF CONTENTS I. INTRODUCTION 1 1. Shockless Airfoils and Supercritical Wing Sections 1 2. Differential Equations of Gas Dynamics 2 II. THE METHOD OF COMPLEX CHARACTERISTICS 5 1. A New Boundary Value Problem 5 2. Topology of the Paths of Integration 8 3. Iterative Scheme for the Map Function 9 III. TRANSONIC AIRFOIL DESIGN CODE 10 1. Isolated Airfoils 10 2. Compressor Cascades 12 3. Turbine Cascades 13 4. Comparison with Experiment 14 IV. TWO-DU1ENSIONAL ANALYSIS CODE 16 1. Wave Drag 16 2. A Fast Solver 19 3. Remarks about Three-Dimensional Flow 24 V. REFERENCES 26 VI

Título: Supercritical Wing Sections III by Frances Bauer, Paul Garabedian, David Korn

Editorial: Berlin, Heidelberg Springer Berlin Heidelberg 1977

Descripción física: 1 online resource

Mención de serie: Lecture Notes in Economics and Mathematical Systems 0075-8442 150

Parameters -- 8. Glossary of Output Parameters -- VII. Plots and Tables of Results -- 1. Airfoils Designed Using the New Code -- 2. Data from Analysis and Experiment -- VIII. Fortran Listings of the Codes -- 1. The New Design Code K -- 2. Update of the Analysis Code H.

Copyright/Depósito Legal: 851820972 934982574

ISBN: 9783642488528 electronic bk.) 3642488528 electronic bk.) 9783540085331 print) 3540085335 print) 3642488528

Materia: Economics Economics.

Autores: Garabedian, Paul Korn, David

Enlace a formato físico adicional: Print version 9783540085331

Punto acceso adicional serie-Título: Lecture notes in economics and mathematical systems 150. 0075-8442
