

NEW BOOK INFORMATION FROM MULTI-SCIENCE PUBLISHING

NOW AVAILABLE

Jet Aeroacoustics

Edited by Ganesh Raman

ISBN 0906522 69 2 • viii + 570pp • 160 x 230mm • £85 • Publication date: July 2008



About the Book:

Jet Aeroacoustics is a growing area, a function of the significant projected growth in global air transportation. With the era of widespread supersonic flight and the proliferation of general aviation aircraft on future horizons, the noise generated by the high speed flow from aircraft engine exhaust is of great concern for communities near airports, for passengers in the aircraft's cabin, and for the structural integrity of the airframe. In addition, there are a number of industrial situations that desire lower noise from high pressure gas jets. Examples from industry include the noise from valves, burners, high pressure jets used in machining, miniature jets used for drying, and high pressure release situations in the power industry. Understanding the source of the noise itself is critical in the development of future noise reduction technologies. The book includes developments in the area of jet aeroacoustics theory, computations and experiments. Topics include: jet noise theories, simulation methodologies, predicting noise from complex geometries, design of jet noise facilities and jet noise measurements. The perspectives are provided by internationally recognized experts in the field. The book will provide a student, scientist or practicing engineer with a concise overview of developments in the field of jet aeroacoustics and a good starting point for further research.

About the Editor:

Dr. Ganesh Raman's research interests are in the areas of supersonic jet noise, screech and high speed jet flows. He has over 20 years of experience working with Industry, Academia and the U.S. Government. He is Associate Dean for Research and Associate Professor for Mechanical and Aerospace Engineering at the Illinois Institute of Technology (IIT). Before coming to IIT he spent 14 years performing contract research at NASA Glenn Research Center on jet aeroacoustics. He is a Fellow of the American Society of Mechanical Engineers (ASME), Fellow of the Royal Aeronautical Society, Associate Fellow of American Institute of Aeronautics and Astronautics (AIAA) and serves as Editor-in-Chief of the International Journal of Aeroacoustics. Dr. Raman obtained a Bachelor's degree from the Indian Institute of Technology, Bombay and a Ph.D. from Case Western Reserve University, USA.

**See over for contents
and order form**

CONTENTS

Preface

Acknowledgements

A unified approach to some recent developments in jet noise theory

M.E. Goldstein

The source of Aerodynamic Noise

Geoffrey M. Lilley

Aeroacoustics of supersonic jet issued from corrugated nozzle: new approach and prospects

Victor F. Kopiev, Nikolay N. Ostrikov, Sergey A. Chernyshev and John W. Elliott

Simulations of supersonic jet noise

Philip J. Morris, Lyle N. Long, Thomas E. Scheidegger and Said Boluriaan

Coupling of integral acoustics methods with LES for jet noise prediction

Ali Uzun, Anastasios S. Lyrintzis and Gregory A. Blaisdell

Noise prediction for increasingly complex jets.

Part I: Methods and tests

Michael L. Shur, Philippe R. Spalart and Michael Kh. Strelets

Noise prediction for increasingly complex jets.

Part II: Applications

Michael L. Shur, Philippe R. Spalart and Michael Kh. Strelets

Analysis of jet-noise-reduction concepts by large-eddy simulation

Michael L. Shur, Philippe R. Spalart, Michael Kh. Strelets and Andrey V. Garbaruk

Investigation of the PSE approach for subsonic and supersonic hot jets. Detailed comparisons with LES and Linearized Euler Equations results

Estelle Piot, Gregoire Casalis, Frederic Muller and Christophe Bailly

Vortex ring input in subsonic jet noise

Victor F. Kopiev, Mikhail Yu. Zaitsev, Sergey A. Chernyshev and Nikolay N. Ostrikov

Ray traces through unsteady jet turbulence

J. B. Freund and T. G. Fleischman

Acoustic radiation from a semi-infinite duct with a subsonic jet

X. Zhang, X.X. Chen and C.L. Morfey

Designing clean jet-noise facilities and making accurate jet-noise measurements

K. K. Ahuja

Experimental study of the spectral properties of near-field and far-field jet noise

Christophe Bogey, Sébastien Barré, Vincent Fleury, Christophe Bailly and Daniel Juvé

Coherent structures in subsonic jets: a quasi-irrotational source mechanism?

François Coiffet, Peter Jordan, Joël Delville, Yves Gervais and Fabienne Ricaud

On the near field pressure of a transonic axisymmetric jet

Lawrence S. Ukeiley and Michael K. Ponton

Effect of nozzle internal contour on jet aeroacoustics

K. Viswanathan and L. T. Clark

Acoustic and mean flow measurements of high-speed, helium-air mixture jets

Michael J. Doty and Dennis K. McLaughlin

Effects of vortex generating tabs on noise sources in an ideally expanded Mach 1.3 jet

J. Hileman and M. Samimy

Sources

ORDER FORM

ORDER DETAILS: I wish to purchase a copy/copies of **Jet Aeroacoustics** at £85 each

number of copies:

PAYMENT DETAILS: Please invoice me/us: yes/no
[delete as necessary]

Please charge to my credit card (Visa/Master card only): yes/no [delete as necessary]

Number:

Expiry date:

Cardholder name:

YOUR DETAILS: Name:

Organisation:

E-mail:

Full postal address:

.....
.....
.....
.....
.....
.....
.....
.....
.....
.....

Multi-Science Publishing Co. Ltd.

5 Wates Way, Brentwood, Essex CM15 9TB, UK · Tel: +44(0)1277 224632 · Fax: +44(0)1277 223453

E-mail: info@multi-science.co.uk · Website: www.multi-science.co.uk

serving science & technology since 1961