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# **Computational Aeroacoustics Edited by Ganesh Raman**

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#### **About the Book:**

Computational Aeroacoustics (CAA) deals with the simulation of sound generated by unsteady flows and is a rapidly growing area due to advances in computational power and the significant projected growth in global transportation. With the era of widespread supersonic flight and the proliferation of general aviation aircraft on future horizons, the noise generated by aircraft 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 situations that desire lower noise including underwater vehicles, wind turbines, and helicopter rotors. Understanding the source of the noise itself, its manifestation in the nearfield and propagation to the farfield are all critical in the development of future noise reduction technologies. When compared to conventional flow computations. CAA requires special treatment in the areas of numerical errors, low numerical noise, numerical dispersion, dissipation, non-reflective boundary conditions, methodologies to test boundary condition performance, and consideration of multiple scales. The perspectives in this book 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 computational 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 at the Illinois Institute of Technology (IIT) and Associate Professor for Mechanical and Aerospace Engineering. 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 the 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.

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