Laser Anemometry In Fluid Mechanics-II

Selected Papers from the Second Intl. Symp. On Appl. Of Laser-doppler Anemometry to Fluid Mechanics

Editors:

R.J. Adrian, D.F.G. Durão, F. Durst, H. Mishina and J.H. Whitelaw

Contents

Introduction. By J.H. Whitelaw.

Chapter I Optical and Electronic Systems

- The statistical bias of laser anemometry applied.in sinusoidal flow fields. By J.C. Erdmann, B. Lehmann and C. Tropea.
- An examination of velocity bias in a highly turbulent separated and reattatching flow. By E.W. Adams, J. K. Eaton and J.P. Johnston.
- Combined transform Doppler anemometry. By R.G.W. Brown.
- Laser speckle methods in fluid dynamics applications. By L.M.M. Lourenço and M.C Whiffen.
- Design of fiber optic systems for Doppler difference laser velocimetry. By J.D.C. Jones, R.K.Y. Chan and D.A. Jackson.
- Simultaneous measurements of size, concentration and velocity of spherical particles by a laser Doppler method. *By M. Saffman, P. Buchhave and H. Tanger.*
- Dual cylindrical wave laser-Doppler method for measurement of wall shear stress. By A.A. Naqwi, W.C. Reynolds and L.W. Carr.
- A wave-following anemometer. By Tak Kee Cheung and Robert L. Street.

Chapter II Boundary Layer and Internal Flows

- A comparison of laser-Doppler anemometry and probe measurements within the boundary layer of an airfoil at subsonic flow. By H. Hoheisel, M. Hoeger, P. Meyer and G. Koerber.
- Period doubling in rotational Taylor-Couette flow. By Gerd Pfister.
- An index matched flow system for measurements of flow in complex geometries. By A. Dybbs and R.V. Edwards.
- LDA measurements in the turbulent near-wake of blunt bodies. By C. Berner and A. Koenecke.
- Coherent structures in hot jets. By D.F.G. Durão and G. Pita.
- Measurements of wave-excited jets. By D.J. Collins, W.H. Harch and M.F. Platzer.
- LDV measurements of two-dimensional turbulent free and impinging air jets. By T. Yumino and T. Asanuma.
- Experimental analysis of tip vortex by laser Doppler anemometry. By L. Accardo, A. Cenedese and F. Cioffi.

Chapter III Separated Flows

- .Measurements of turbulent recirculating flow in a cylindrical reactor vessel. By S. Obi, K. Hishida, M. Maeda and S. Yokobori.
- Hydrodynamic studies of flocculation and filtration. By D. Dartus, D. Houi, A. Kelil, M. Milleret and F. Valentin.
- Internal flow-filed measurements in a model can-type gas turbine combustion chamber. By *P. Koutmos, J.J. McGuirk and C. Vafidis.*
- Study of boundary layer separation on a supercritical profile with a spolier by means of a laser Doppler velocimeter. *By P. Meyer and G. Koerber.*
- A laser anemometry study of separated flow behind a circular cylinder. By A. McKillop and F. Durst.
- Separated turbulent flow over a small amplitude wave. By J.J. Buckles, T.J. Hanratty and R.J. Adrian.
- Effects of pulsatile flow on the characteristics of hydraulic servo-valve orifices. By M.R. Banieghbal, D.C. Pountney and W. Weston.

Chapter IV Rotating Machinery and Combustion

- Investigations by LDA of the fluid behaviour downstream of a mixed-flow impeller. By S.M. Fraser, C. Carey and G. Wilson.
- A laser anemometer system for engine flow studies. By G. Wigley and R. Glanz.
- Cycle-variation bias in spark ignition turbulence measurements. By P.O. Witze and J.K. Martin.
- Seeling investigations and identification of scattering particles in a single-cylinder side-valve petrol engine. *By N.P. Smith, M.L. Yeoman and T.E. Dixon.*
- LDA study of non-steady flame propagation in a constant volume duct. By D. Dunn-Rankin, R.K. Cheng and R.F. Sawyer.
- Instantaneous two-component laser anemometry and temperature measurements in a complex reacting flow. By G.S. Samuelsen, J.C. LaRue and E.T. Seiler.
- LDA-measurements of liquid swirl in converging swirl chambers with tangential inlets. By H. Horvay and W. Leuckel.
- Turbulent wall fires LDV and temperature measurements and implications. *By J.M. Most, B. Sztal and M.A. Delichatsios.*