John L. Lumley (Ed.)

Fluid Mechanics and the Environment: Dynamical Approaches

A Collection of Research Papers Written in Commemoration of the 60th Birthday of Sidney Leibovich



Contents

Point Vortex Models and the Dynamics of Strong Vortices in the Atmosphere and Oceans H. Aref and M.A. Stremler
Bubble Disconnection: Self-Similarity and Cascading Physics O.N. Boratav, YJ. Chen, and P. Steen
Implicit Multigrid Computation of Unsteady Flows with Applications to Aeroelasticity D.A. Caughey
Second-Harmonic Resonance with Parametric Excitation and Damping A.D.D. Craik, H. Okamoto, and H.R. Allen
Bubble and Temperature Fields in Langmuir Circulation D. Farmer, S. Vagle, and M. Li
Computing Periodic Orbits J. Guckenheimer
Dynamics of Layers in Geophysical Flows J.C.R. Hunt and M. Galmiche
Radiative Transport in Anisotropic Media A. Kribus, C. Zhang, and R. Ben-Zvi
Vortex-Wake Pollution: A Problem in Fluid Mechanics S.K. Lele
Turbulent Bursts in Couette-Taylor Flow P.S. Marcus
Surface-Wave Effects on Winds and Currents in Marine Boundary Layers J.C. McWilliams and P.P.Sullivan

Synchronised Behaviour in Three Coupled Faraday Disk Homopolar Dynamos
I.M. Moroz
Large-Eddy Simulation Using Projection onto Local Basis Functions S.B. Pope
Low-Dimensional Dynamical Model of a Turbulent Boundary Layer over a Compliant Surface: Preliminary Results D. Rempfer, P. Blossey, L. Parsons, and J. Lumley
Is High Reynolds Number Turbulence Locally Isotropic? X. Shen and Z. Warhaft
Observations and Theories of Langmuir Circulation: A Story of Mixing J.A. Smith
Low-Dimensional Models with Varying Parameters: A Model Problem and Flow Through a Diffuser with Variable Angle T. Smith and P. Holmes
Surfactant Scavenging by Microbubble Clouds: Consequences for Capillary Wave Damping A.J. Szeri, R.L. Stefan, and J.R. Saylor
A Spectral Domain Decomposition Method and Its Application to the Simulation of Shear-Stratified Turbulence K.L. Tse, A. Mahalov, B. Nicolaenko, and J. Fernando
Wing Wake Vortices and Temporal Vortex Pair Instabilities C.H.K. Williamson, T. Leweke, and G.D.Miller
Laboratory Measurements of the Generation of Langmuir Circulations and Surface Waves F. Veron and W.K. Melville