

Contents

| | |
|---|-----|
| Interfacial Dynamics Pioneer Stephen H. Davis (1939–2021) | |
| <i>Michael J. Miksis, G. Paul Neitzel, and Peter W. Voorhees</i> | 1 |
| The Early Days and Rise of Turbulence Simulation | |
| <i>John Kim and Anthony Leonard</i> | 21 |
| Flows Over Rotating Disks and Cones | |
| <i>P. Henrik Alfredsson, Kentaro Kato, and R.J. Lingwood</i> | 45 |
| Turbulent Drag Reduction by Streamwise Traveling Waves | |
| of Wall-Normal Forcing | |
| <i>Koji Fukagata, Kaoru Iwamoto, and Yosuke Hasegawa</i> | 69 |
| Gas Microfilms in Droplet Dynamics: When Do Drops Bounce? | |
| <i>James E. Sprittles</i> | 91 |
| Fluid Dynamics of Squirmers and Ciliated Microorganisms | |
| <i>Takuji Ishikawa</i> | 119 |
| Vortices and Forces in Biological Flight: Insects, Birds, and Bats | |
| <i>Hao Liu, Shizhao Wang, and Tianshu Liu</i> | 147 |
| The Fluid Mechanics of Female Reproduction: A Review of the | |
| Biofluid Mechanics of Pregnancy and Delivery | |
| <i>Megan C. Leftwich and Alexa C. Baumer</i> | 171 |
| Statistical Models for the Dynamics of Heavy Particles in Turbulence | |
| <i>J. Bec, K. Gustavsson, and B. Mehligh</i> | 189 |
| Advances in Modeling Dense Granular Media | |
| <i>Ken Kamrin, Kimberly M. Hill, Daniel I. Goldman, and Jose E. Andrade</i> | 215 |
| Nonideal Compressible Fluid Dynamics of Dense Vapors and | |
| Supercritical Fluids | |
| <i>Alberto Guardone, Piero Colonna, Matteo Pini, and Andrea Spinelli</i> | 241 |
| The Dynamics of Jupiter's and Saturn's Weather Layers: A Synthesis | |
| After <i>Cassini</i> and <i>Juno</i> | |
| <i>Peter L. Read</i> | 271 |

| | |
|--|-----|
| Bubble Plumes in Nature | |
| <i>Silvana S.S. Cardoso and Julian H.E. Cartwright</i> | 295 |
| Deformation and Breakup of Bubbles and Drops in Turbulence | |
| <i>Rui Ni</i> | 319 |
| Large-Scale Eddy-Mean Flow Interaction in the Earth's | |
| Extratropical Atmosphere | |
| <i>Noboru Nakamura</i> | 349 |
| Gas-Particle Dynamics in High-Speed Flows | |
| <i>Jesse Capecelatro and Justin L. Wagner</i> | 379 |
| Building Ventilation: The Consequences for Personal Exposure | |
| <i>Rajesh K. Bhagat, Stuart B. Dalziel, M.S. Davies Wykes, and P.F. Linden</i> | 405 |
| Molecular Mechanics of Liquid and Gas Slip Flow | |
| <i>Nicolas G. Hadjiconstantinou</i> | 435 |
| Multiscale Velocity Gradients in Turbulence | |
| <i>Perry L. Johnson and Michael Wilczek</i> | 463 |
| Fluid-Elastic Interactions Near Contact at Low Reynolds Number | |
| <i>Bhargav Rallabandi</i> | 491 |
| Learning Nonlinear Reduced Models from Data | |
| with Operator Inference | |
| <i>Boris Kramer, Benjamin Peherstorfer, and Karen E. Willcox</i> | 521 |
| Flow Mechanics in Ablative Thermal Protection Systems | |
| <i>Nagi N. Mansour, Francesco Panerai, Jean Lachaud, and Thierry Magin</i> | 549 |
| Fluid Dynamics of Airtanker Firefighting | |
| <i>Dominique Legendre</i> | 577 |
| Indexes | |
| Cumulative Index of Contributing Authors, Volumes 1–56 | 605 |
| Cumulative Index of Article Titles, Volumes 1–56 | 617 |