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B.3 Material Properties: Measurement and Data

by William A. Wakeham, Marc J. Assael, Abraham Marmur, Joël De Coninck, Terry D. Blake, Stephanus A. Theron, Eyal Zussman

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B.4 Pressure Measurement Systems

by Beverley J. McKeon, Rolf H. Engler

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The editorial comments of John Foss were gratefully received and significantly improved this text.

B.5 Velocity, Vorticity, and Mach Number

by Beverley J. McKeon, Geneviève Comte-Bellot, John F. Foss, Jerry Westerweel, Fulvio Scarano, Cameron Tropea, James F. Meyers, Joseph W. Lee, Angelo A. Cavone, Richard Schodl, Manoochehr M. Koochesfahani, Yiannis Andreopoulos, Werner J.A. Dahm, John A. Mullin, James M. Wallace, Petar V. Vukoslavčević, Scott C. Morris, Eric R. Pardyjak, Alvaro Cuerva

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B.7 Temperature and Heat Flux

by Tomasz A. Kowalewski, Phillip Ligrani, Andreas Dreizler, Christof Schulz, Uwe Fey

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B.8 Force and Moment Measurements

by Klaus Hufnagel, Günter Schewe

The author of Sect. 8.1 would like to gratefully acknowledge the assistance of Mr. David Rival in proofreading the manuscript.

C.10 Measurements of Turbulent Flows

by Giovanni Paolo Romano, Nicholas T. Ouellette, Haitao Xu, Eberhard Bodenschatz, Victor Steinberg, Charles Meneveau, Joseph Katz

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C.12 Wall-Bounded Flows

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Throughout the course of conducting boundary-layer stability experiments and constructing wind tunnels, I (WSS) have learned a great deal from my colleagues who freely discussed their own ideas and techniques with me and offered suggestions to improve my own work. Many of the ideas on experimental techniques in this paper came from these discussions. The short list of principal contributors contains Thomas Corke, James Kendall, Philip Klebanoff, Victor Levchenko, Hassan Nagib, Mark Morkovin, Werner Pfenninger, Ronald Radeztsky, Mark Reibert, Gregory Reynolds, and Shohei Takagi to whom I should like to express my sincere thanks.

C.16 Aerodynamics

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C.19 Microfluidics: The No-Slip Boundary Condition

by Eric Lauga, Michael P. Brenner, Howard A. Stone

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Chapters C.10, C.14, Sect. 10.4

Joseph Katz's research focuses on experimental fluid mechanics and development of optical diagnostics techniques involving PIV and holography for laboratory and field applications, especially in the ocean. He has worked in bubble dynamics and cavitation, turbulent single and multiphase flows, flow structure and turbulence within turbomachines, turbulence in the bottom boundary layer of the coastal ocean and canopy flows. Using holography he has also studied swimming behavior of plankton both in the laboratory and in the ocean. He has received several awards including the 2004 ASME Fluids Engineering Award.

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Chapter C.12, Sects. 12.1, 12.2

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Chapter B.5, Sect. 5.4

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Chapter B.7, Sect. 7.1

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Chapter C.19

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Chapter D.22, Sect. 22.6

Jacques Lewalle has applied the continuous wavelet transforms to data analysis, e.g. paper formation and nerve response, as well as fluid dynamics (2004 Lewis F. Moody Award of ASME/FED), and to the mathematical physics of the diffusion, Poisson and Navier–Stokes equations. His primary interest is in the multiscale interactions in incompressible turbulence and 3-D vorticity dynamics.

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Chapters B.4, B.5, Sects. 4.1–4.3, 5.1

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Chapters B.6, C.11

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Chapters D.22, D.23, Sect. 22.1–22.3

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Chapter C.9, Sect. 9.5

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Chapters A.1, A.2, Sect. 1.1–1.7, 2.2

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