

## CURRICULUM VITAE

### JOHN KIM

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#### RESEARCH INTEREST:

Numerical simulation of transitional and turbulent flows, physics and control of turbulent flows, and numerical algorithms for large-scale scientific computations.

#### EDUCATION:

- B.S. Seoul National University 1970
- M.S. Brown University 1974
- Ph.D. Stanford University 1978

#### EMPLOYMENT:

- National Research Council Fellow, NASA Ames Research Center, 1978–1980
- Acting Assistant Professor, Stanford University, 1980–1982
- Research Scientist, NASA Ames Research Center, 1982–1987.
- Head, Turbulence Physics Section, NASA Ames Research Center, 1987–1992
- Chief, Turbulence and Transition Physics Branch, NASA Ames Research Center, 1992–1993
- Professor, Department of Mechanical and Aerospace Engineering, UCLA, 1993–

#### OTHER PROFESSIONAL EXPERIENCE:

- Steering Committee for NASA/Stanford Center for Turbulence Research, 1986–1993
- Co-Chair, 42nd Annual Meeting of Division of Fluid Dynamics, American Physical Society (DFD-APS), 1989–1989
- Executive Committee, DFD-APS, 1990–1993
- Frenkiel Award Committee, DFD-APS, 1994
- Fluid Dynamics Prize Committee (Vice Chair and Chair), American Physical Society, 1994–1995
- Nomination Committee, DFD-APS, 2001–2002
- Otto Laporte Award Committee, American Physical Society, 2003
- Nomination Committee (Vice Chair and Chair), DFD-APS, 2008–2009
- Publishing Policy Committee, American Institute of Physics, 2009–2011
- Chair, Journal Editors Panel, American Institute of Physics, 2009–2011

#### EDITORIAL POSITION:

- Editor, Physics of Fluids, 1998–
- Editorial Committee, Annual Review of Fluid Mechanics, 2007–2011
- Editorial Advisory Board, AIAA Journal, 2011–

#### HONORS & AWARDS:

- NASA Medal for Exceptional Scientific Achievement, NASA (1985)
- H. Julien Allen Award, NASA Ames Research Center (1994)
- Otto Laporte Award, American Physical Society (2001)
- Ho-Am Prize in Engineering, Ho-Am Foundation (2002)
- Distinguished Alumni Award, College of Engineering, Seoul National University (2009)
- ISI Highly Cited Researcher
- Fellow, American Physical Society
- Fellow, American Institute of Aeronautics and Astronautics
- Member, National Academy of Engineering

## PUBLICATIONS:

### Papers Published in Journals:

1. "The dependence of flame propagation on surface heat transfer - I. Downward burning," by M. Sibulkin, J. Kim, and J. Creeden, *Combustion Science and Technology*, **14**, 1976.
2. "The dependence of flame propagation on surface heat transfer - II. Upward burning," by M. Sibulkin and J. Kim, *Combustion Science and Technology*, **16**, 1977.
3. "Investigation of a reattaching turbulent shear layer : Flow over a backward facing step," by J. Kim, S.J. Kline and J.P. Johnston, Trans. ASME, *J. Fluids Engineering*, **102**, 1980.
4. "On the numerical solution of time-dependent viscous incompressible fluid flows involving solid boundaries," by P. Moin and J. Kim, *J. Comp. Physics*, **35**, No. 3, 1980.
5. "Numerical investigation of turbulent channel flow," by P. Moin and J. Kim, *J. Fluid Mech.*, **118**, 1982.
6. "On the structure of wall-bounded turbulent flows," by J. Kim, *Phys. Fluids*, **26**, no. 8, 1983.
7. "Turbulence structures associated with the bursting event," by J. Kim, *Phys. Fluids*, **28**, no. 1, 1985.
8. "Application of a fractional step method to incompressible Navier Stokes equations," by J. Kim and P. Moin, *J. Comp. Physics*, **59**, No 2, 1985.
9. "The structure of vorticity field in turbulent channel flow. Part I: Analysis of instantaneous fields and statistical correlations," by P. Moin and J. Kim, *J. Fluid Mech.*, **155**, 1985.
10. "Evolution of a curved vortex filament into a vortex ring," by P. Moin, A. Leonard, and J. Kim, *Phys. Fluids*, **29**, no. 4, 1986.
11. "The structure of vorticity field in turbulent channel flow. Part II: Ensemble averaged field," by J. Kim and P. Moin, *J. Fluid Mech.*, **162**, 1986.
12. "Steady flow past sudden expansions at large Reynolds number. Part II: Navier-Stokes solutions for the cascade expansion," by F. S. Milos, A. Acrivos, and J. Kim, *Phys. Fluids*, **30**, no. 1, 1987.
13. "Turbulence statistics in fully developed channel flow at low Reynolds number," by J. Kim, P. Moin and R. D. Moser, *J. Fluid Mech.*, **177**, 1987.
14. "Numerical simulations of turbulent spots in plane Poiseuille and boundary-layer flow," by D. Henningson, P. R. Spalart, and J. Kim, *Phys. Fluids*, **30**, no. 10, 1987.
15. "Scaling of the bursting frequency in turbulent boundary layers at low Reynolds numbers," by J. Kim and P. R. Spalart, *Phys. Fluids*, **30**, no. 11, 1987.
16. "Reynolds-stress and dissipation rate budgets in a turbulent channel flow," by N. Mansour, J. Kim and P. Moin, *J. Fluid Mech.*, **194**, 1988
17. "On the shape and dynamics of wall structures in turbulent channel flow," by Y. Guezennec, U. Piomelli and J. Kim, *Phys. Fluids A*, **1**, no. 4, 1989.
18. "On the secondary instability in plane Poiseuille flow," by J. Kim and R. D. Moser, *Phys. Fluids A*, **1**, no. 5, 1989.
19. "On the structure of pressure fluctuations in simulated turbulent channel flow," by J. Kim, *J. Fluid Mech.*, **205**, 1989.

20. "New approximate boundary conditions for large-eddy simulations of wall-bounded flows," by U. Piomelli, J. Ferziger, P. Moin and J. Kim, *Phys. Fluids A*, **1**, no. 6, 1989.
21. "Supercomputer requirements for selected disciplines important to Aerospace," by V. Peterson, J. Kim, T. Holst, G. S. Deiwert, D. M. Cooper, A. B. Watson and F. R. Bailey, *Proceedings of IEEE*, **77**, No. 7, 1989.
22. "Near-wall  $k - \epsilon$  modeling," by N. Mansour, J. Kim and P. Moin, *AIAA Journal*, **27**, No. 8, 1989.
23. "Structure of turbulence at high shear rate," by M. J. Lee, J. Kim and P. Moin, *J. Fluid Mech.*, **216**, 1990.
24. "Evolution and dynamics of shear-layer structure in near-wall turbulence," by A. V. Johansson, P. H. Alfredsson, J. Kim, *J. Fluid Mech.*, **224**, 1991.
25. "On turbulent spots in plane Poiseuille flow," by D. S. Henningson and J. Kim, *J. Fluid Mech.*, **228**, 1991; see also NASA TM-102836.
26. "Numerical investigation of instability and transition in rotating plane Poiseuille flow," by K. Yang and J. Kim, *Phys. Fluids A*, **3**, No. 4, 1991.
27. "Similarity between turbulent kinetic energy and temperature spectra in the near-wall region," by R. A. Antonia and J. Kim, *Phys. Fluids A*, **3**, No. 5, 1991.
28. "Turbulent Prandtl number in the near-wall region of a turbulent channel flow," by R. A. Antonia and J. Kim, *Int. J. Heat and Mass Transfer*, **34**, No. 7, 1991.
29. "Reynolds shear stress and heat flux calculations in a fully developed turbulent duct flow," by R. A. Antonia and J. Kim, *Int. J. Heat and Mass Transfer*, **34**, No. 8, 1991.
30. "On the effect of riblets in fully developed laminar channel flows," by H. Choi, P. Moin and J. Kim, *Phys. Fluids A*, **3**, No. 8, 1991.
31. "An eddy viscosity calculation method for a turbulent duct flow," by R. A. Antonia, D. K. Bisset and J. Kim, *Trans., ASME, J. Fluids Engineering*, **113**, No. 4, 1991.
32. "Some characteristics of small-scale turbulence in a turbulent duct flow," by R. A. Antonia and J. Kim, L. W. B. Browne, *J. Fluid Mech.*, **233**, 1991.
33. "Low Reynolds number effects in a fully developed turbulent channel flow," by R. A. Antonia, M. Teitel, J. Kim, and L. W. B. Browne, *J. Fluid Mech.*, **236**, 1992.
34. "The dimension of attractors underlying turbulent Poiseuille flow," by L. Keefe, P. Moin and J. Kim, *J. Fluid Mech.*, **242**, 1992.
35. "Propagation velocity of perturbations in turbulent channel flow," by J. Kim and F. Hussain, *Phys. Fluids A*, **5**, No. 3, 1993.
36. "Isotropy of the small scales of turbulence at low Reynolds number," by J. Kim and R. A. Antonia, *J. Fluid Mech.*, **251**, 1993.
37. "Feedback control for unsteady flow and its application to the stochastic Burgers equation," by H. Choi, Roger Temam, P. Moin and J. Kim, *J. Fluid Mech.*, **253**, 1993.
38. "Direct numerical simulation of turbulent flow over riblets," by H. Choi, P. Moin and J. Kim, *J. Fluid Mech.*, **255**, 1993.
39. "On the measurement of lateral velocity derivatives in turbulent flow," by R. A. Antonia, Y. Zhu and J. Kim, *Experiments in Fluids*, **15**, No. 1, 1993.
40. "A numerical study of local isotropy of turbulence," by R. A. Antonia and J. Kim, *Phys. Fluids*, **6**, No. 2, Part 2 (Dedication Issue: In Honor of William C. Reynolds on His 60th Birthday), 1994.

41. "Active turbulence control for drag reduction in wall-bounded flows," by H. Choi, P. Moin and J. Kim, *J. Fluid Mech.*, **262**, 1994.
42. "Corrections for spatial velocity derivatives in a turbulent shear flow," by R. A. Antonia, Y. Zhu, and J. Kim, *Experiments in Fluids*, **16**, 1994.
43. "Low Reynolds number effects on near-wall turbulence," by R. A. Antonia and J. Kim, *J. Fluid Mech.*, **276**, 1994.
44. "Regeneration mechanisms of near-wall turbulence structures," by J. M. Hamilton, J. Kim and F. Waleffe, *J. Fluid Mech.*, **287**, 1995.
45. "A numerical study of turbulent supersonic isothermal-wall channel flow," by G. N. Coleman, J. Kim and R. D. Moser, *J. Fluid Mech.*, **305**, 1995
46. "Two-point velocity and vorticity correlations for axisymmetric turbulence," by Y. Zhu, R. A. Antonia and J. Kim, *Phys. Fluids*, **8**, No. 3, 1996.
47. "A numerical study of three-dimensional wall-bounded flows," by G. N. Coleman, J. Kim, and A. Le, *Int. J. Heat and Fluid Flow*, **17**, No. 3, 1996.
48. "Direct numerical simulation of strained three-dimensional wall-bounded flows," by G. N. Coleman, J. Kim and P. R. Spalart, *Experimental Thermal and Fluid Science* (special issue to honor Peter Bradshaw), **13**, 239-251, 1996.
49. "Tackling turbulence with supercomputers," by P. Moin and J. Kim, *Scientific American*, **276**, No. 1, 1997.
50. "Direct numerical simulation of turbulent flow over a backward-facing step," by H. Le, P. Moin and J. Kim, *J. Fluid Mech.*, **330**, 1997
51. "A systems theory approach to the feedback stabilization of infinitesimal and finite-amplitude disturbances in plane Poiseuille flow," by S. S. Joshi, J. L. Speyer and J. Kim, *J. Fluid Mech.*, **332**, 1997.
52. "Coherent structures near the wall in a turbulent channel flow," by J. Jeong, F. Hussain, W. Schoppa and J. Kim, *J. Fluid Mech.*, **332**, 1997.
53. "Application of neural networks to turbulence control for drag reduction," by C. Lee, J. Kim, D. Babcock, and R. Goodman, *Phys. Fluids*, **9**, No. 6, 1997.
54. "On the effects of nonequilibrium on the subgrid-scale stresses," by U. Piomelli, G. N. Coleman and J. Kim, *Phys. Fluids*, **9**, No. 9, 1997.
55. "Suboptimal control of turbulent channel flow for drag reduction," by C. Lee, J. Kim and H. Choi, *J. Fluid Mech.*, **358**, 1998.
56. "Control of streamwise vortices with uniform magnetic fluxes," by J. Lim, H. Choi and J. Kim, *Phys. Fluids*, **10**, No. 8, 1998.
57. "Skin-friction drag reduction via robust reduced-order linear feedback control," L. Cortelezzi, K. Lee, J. Kim and J. Speyer, *Int. J. Comp. Fluid Dynamics*, **11**, 1998.
58. "Finite-dimensional optimal control of Poiseuille flow," by S. Joshi, J. Speyer and J. Kim, *AIAA J. Guidance, Control, and Dynamics*, **22**, No. 2, 1999.
59. "DNS of turbulent channel flow up to  $Re_\tau = 590$ ," R. Moser, J. Kim and N. Mansour, *Phys. Fluids*, **11**, No. 4, 1999.
60. "Turbulent boundary layer control utilizing the Lorentz force" T. Berger, J. Kim, C. Lee and J. Lim, *Phys. Fluids*, **12**, No. 3, 2000.

61. "A linear process in wall-bounded turbulent shear flows," J. Kim and J. Lim, *Phys. Fluids*, **12**, No. 8, 2000.
62. "A numerical study of strained three-dimensional wall-bounded turbulence," G. Coleman, J. Kim and P. Spalart, *J. Fluid Mech.*, **416**, 2000.
63. "Near-wall turbulence structures in three-dimensional boundary layers," A. Le, G. Coleman and J. Kim, *Int. J. Heat and Fluid Flow*, **21**, 2000.
64. "Application of reduced order controller to turbulent flows for drag reduction," K. Lee, L. Cortelezzi, J. Kim and J. L. Speyer, *Phys. Fluids*, **13**, No. 5, 2001.
65. "Application of the Goore Scheme to turbulence control for drag reduction: (I) Improvement of the Goore Scheme," C. Lee, N. Kim, and J. Kim, *KSME International Journal*, **15**, No. 11, 2001
66. "Application of the Goore Scheme to turbulence control for drag reduction: (II) Application to turbulence control," C. Lee and J. Kim *KSME International Journal*, **15**, No. 11, 2001
67. "Control of the viscous sublayer for drag reduction," C. Lee and J. Kim, *Phys. Fluids*, **14**, No. 7, 2002.
68. "Control of Turbulent Boundary Layer," J. Kim, *Phys. Fluids*, **15**, No. 5, 2003.
69. "Direct numerical simulation of a decelerated wall-bounded shear flow," G. Coleman, J. Kim and P. Spalart, *J. Fluid Mech.*, **495**, 2003.
70. "Effect of roughness on wall-bounded turbulence," K. Bhaganagar, J. Kim and G. Coleman, *Flow, Turbulence and Combustion*, **72**, p463-492, 2004.
71. "A singular value analysis of boundary layer control," J. Lim and J. Kim, *Phys. Fluids*, **16**, No. 6, 2004.
72. "Effects of hydrophobic surface on skin-friction drag," T. Min and J. Kim, *Phys. Fluids*, **16**, No. 7, 2004.
73. "Effects of hydrophobic surface on stability and transition," T. Min and J. Kim, *Phys. Fluids*, **17**, No. 10, 2005.
74. "Sustained sub-laminar drag in a fully developed channel flow," T. Min, S. Kang, J. Speyer and J. Kim, *J. Fluid Mech.*, **558**, 2006.
75. "A linear systems approach to flow control," J. Kim, T. R. Bewley, *Annu. Rev. Fluid Mech.*, **39**, 2007.
76. "Effect of roughness on pressure fluctuations in a turbulent channel flow," K. Bhaganagar, G. Coleman and J. Kim, *Phys. Fluids*, **19**, No. 2, 2007.
77. "Fifty years of Physics of Fluids," J. Kim and G. Leal, *Phys. Fluids*, **20**, No. 1, 2008.
78. "Control and system identification of a separated Flow," S.-C. Huang and J. Kim, *Phys. Fluids*, **20**, No. 10, 2008.
79. "Stability of channel flow subject to wall blowing and suction in the form of a traveling wave," C. Lee, T. Min and J. Kim, *Phys. Fluids*, **20**, No. 10, 2008.
80. "A numerical study of laterally strained wall-bounded turbulence," G. Coleman, D. Fedorov, P. Spalart and J. Kim, *J. Fluid Mech.*, **636**, 2009.
81. "State-space approximations of the Orr-Sommerfeld system with boundary inputs and outputs," by A. Or, J. Speyer and J. Kim, *J. Guidance, Control and Dynamics*, **33**, No. 3, pp. 794-802, 2010.

82. "A hybrid-filter approach to turbulence simulation," by B. Rajamani and J. Kim, *Flow, Turbulence and Combustion*, Vol. 85, No. 3-4, p421, 2010.
83. "A numerical study of compressible turbulent boundary layers," by M. Lagha, J. Kim, J. D. Eldredge and X. Zhong, *Phys. Fluids*, **23**, 015106, 2011.
84. "Physics and control of wall turbulence for drag reduction," by J. Kim, *Phil. Trans. R. Soc. A* **369**, 1396-1411, 2011.
85. "Near-wall dynamics of compressible boundary layers," by M. Lagha, J. Kim, J. D. Eldredge and X. Zhong, *Phys. Fluids*, **23**, 065109, 2011.
86. "Reduced balancing transformations for large non-normal state-space systems," by A. Or, J. Speyer and J. Kim, *J. Guidance, Control and Dynamics*, **35**, No. 1, pp. 129-137, 2012.
87. "Studying turbulence using numerical simulation database-XIV," by J. Kim, *Phys. Fluids*, **24**, 100501, 2012.
88. "Progress in Pipe and Channel Flow Turbulence, 1961-2011," by J. Kim, *J. Turbulence*, **13**, N45, 2012.
89. "A numerical study of the effects of superhydrophobic surface on skin-friction drag in turbulent channel flow," by H. Park, H. Park and J. Kim, *Phys. Fluids*, **25**, 110815, 2013.
90. "Controller synthesis for periodic, linear-distributed parameter systems: a channel flow application," by S. Kang, J. Speyer and J. Kim, accepted for publication in *J. Guidance, Control and Dynamics*.

## Papers Published in Conference Proceedings:

1. "Large eddy simulation of turbulent channel flow - ILLIAC IV computation," by J. Kim and P. Moin, *AGARD Conference Proceedings*, No. 271, Turbulent Boundary Layers - Experiments, Theory and Modeling, The Hague, Netherlands, September 24-26, 1979; see also NASA TM-78619.
2. "Large scale numerical simulation of wall bounded turbulent shear flows," by P. Moin and J. Kim, *Proc. of 1980-81 AFOSR-HTTM-Stanford Conference on Complex Turbulent Flows: Comparison of Computation and Experiment*, Stanford University, September 14-18, 1981.
3. "The computer as a complement to the laboratory in fluid dynamics," by J. H. Ferziger and J. Kim, *Proc. of Fifth International Symposium on Computing Methods in Applied Science and Engineering*, Dec. 14-18, 1981, Versailles, France, published by North-Holland Publishing Co.
4. "The effect of rotation on turbulence structure," by J. Kim, *Proc. of the Fourth Symposium on Turbulent Shear Flows*, Karlsruhe, W. Germany, September, 1983; see also NASA TM-84379.
5. "Computation of turbulent flows over a backward facing step," by N. Mansour, J. Kim and P. Moin, *Proc. of the Fourth Symposium on Turbulent Shear Flows*, Karlsruhe, W. Germany, September, 1983; see also NASA TM-85851.
6. "Turbulent flow in a channel with a wall with progressive waves," by G. D. Kuhn, P. Moin, J. Kim and J. H. Ferziger, *Proc. of ASME Symposium on Laminar/Turbulent Boundary Layers: Control, Modification and Marine Applications*, New Orleans, Feb. 1984.
7. "Evolution of a vortical structure associated with the bursting event in a channel flow," by J. Kim, *Proc. of the Fifth Symposium on Turbulent Shear Flows*, Cornell University, Ithaca, New York, August 7-9, 1985.
8. "Numerical investigation of vortical structures in a wall-bounded shear flow," by J. Kim, *Notes on Numerical Fluid Mechanics*, Volume 15, Direct and Large Eddy Simulation of Turbulence by U. Schumann and R. Friedrich (Eds.), Friedr. Vieweg and Sohn, Braunschweig/Wiesbaden, West Germany, 1987; see also *Proc. of EUROMECH 199*, Sept. 30- Oct. 2, 1985, Munich, West Germany.
9. "Investigation of Turbulent Shear Flows by Numerical Simulation," by J. Kim, *Proc. of the Tenth National Congress of Applied Mechanics*, J. P. Lamb (ed.), The University of Texas, Austin, Texas, June 16-20, 1986, published on behalf of the Congress by The American Society of Mechanical Engineers.
10. "Numerical Simulation of Turbulence: a Tool for Studying the Physics of Turbulence," by J. Kim, *Proc. of the 2nd International Conference on Supercomputing*, Santa Clara, California, May 5-8, 1987.
11. "Transport of passive scalars in a turbulent channel flow," by J. Kim and P. Moin, *Proc. of the Sixth Symposium on Turbulent Shear Flows*, Toulouse, France, September 7-9, 1987.
12. "Near-wall  $k - \epsilon$  turbulence modeling," by N. N. Mansour, J. Kim, and P. Moin, *Proc. of the Sixth Symposium on Turbulent Shear Flows*, Toulouse, France, September 7-9, 1987.
13. "Turbulence structure at high shear rate," by M. J. Lee, J. Kim, and P. Moin, *Proc. of the Sixth Symposium on Turbulent Shear Flows*, Toulouse, France, September 7-9, 1987.
14. "Stochastic estimation of structure in turbulent shear flow" by P. Moin, R. J. Adrian, and J. Kim, *Proc. of the Sixth Symposium on Turbulent Shear Flows*, Toulouse, France, September 7-9, 1987.
15. "Investigation of heat and momentum transport in turbulent flows via numerical simulations," by J. Kim, *Proc. of the Second International Symposium on Transport Phenomena in Turbulent Flows*, Tokyo, Japan, October 25-29, 1987; also in *Transport Phenomena in Turbulent Flows* (eds. M. Hirata and N. Kasagi), Hemisphere Publishing Corporation, 1988.

16. "Shear-layer structures in near-wall turbulence," by A. V. Johansson, P. H. Alfredsson, J. Kim, *Proc. of the 1987 Summer Program of the NASA-Stanford Center for Turbulence Research*, CTR-S87, December 1987.
17. "Conditionally averaged structures in wall bounded turbulent flows," by Y. G. Guezennec, U. Piomelli and J. Kim, *Proc. of the 1987 Summer Program of the NASA-Stanford Center for Turbulence Research*, CTR-S87, December 1987.
18. "Structure of turbulent shear flows," by A. K. M. F. Hussain, J. Jeong and J. Kim, *Proc. of the 1987 Summer Program of the NASA-Stanford Center for Turbulence Research*, CTR-S87, December 1987.
19. "Active layer model for wall-bounded turbulence," by M. T. Landahl, J. Kim and P. R. Spalart, *Proc. of the 1987 Summer Program of the NASA-Stanford Center for Turbulence Research*, CTR-S87, December 1987.
20. "Wave-growth associated with turbulent spot in plane Poiseuille flow," by D. S. Henningson, M. T. Landahl and J. Kim, *Proc. of the 1987 Summer Program of the NASA-Stanford Center for Turbulence Research*, CTR-S87, December 1987.
21. "Velocity and pressure fields associated with near-wall turbulence structures," by A. V. Johansson, P. H. Alfredsson and J. Kim, *Proc. of Zoran Zaric Memorial International Seminar on Near-Wall Turbulence*, May 16-20, 1988, Dubrovnik, Yugoslavia.
22. "Turbulence characteristics inside a turbulent spot in plane Poiseuille flow," by D. S. Henningson, J. Kim and P. H. Alfredsson, *Proc. of the 1988 Summer Program of the NASA-Stanford Center for Turbulence Research*, CTR-S88, December 1988.
23. "Turbulence production near walls: the role of flow structures with spanwise asymmetry," by P. H. Alfredsson, A. V. Johansson and J. Kim, *Proc. of the 1988 Summer Program of the NASA-Stanford Center for Turbulence Research*, CTR-S88, December 1988.
24. "On the active control of wall-bounded turbulent flow," by P. Moin, J. Kim and H. Choi, AIAA-89-0960, AIAA 2nd Shear Flow Conference, March 13-16, 1989, Tempe, Arizona.
25. "Study of turbulence physics using numerical simulations," by J. Kim, *Proc. of the 4th International Conference on Supercomputing*, Santa Clara, California, May 1-5, 1989.
26. "The structure of pressure fluctuations in turbulent shear flows," by J. Kim and M. Lee, *Proc. of the Seventh Symposium on Turbulent Shear Flows*, August 21-23, 1989, Stanford University, Stanford, California.
27. "Turbulence characteristics inside a turbulent spot in plane Poiseuille flow," by D. S. Henningson and J. Kim, *Proc. of the Seventh Symposium on Turbulent Shear Flows*, August 21-23, 1989, Stanford University, Stanford, California.
28. "Active turbulence control in a wall-bounded flow using direct numerical simulations," by J. Kim, P. Moin and H. Choi, *Structure of Turbulence and Drag Reduction* by A. Gyr(editor), Springer-Verlag, *Proc. of the second IUTAM symposium on structure of turbulence and drag reduction*, July 25-28, 1989, Federal Institute of Technology (ETHZ), Zürich, Switzerland;
29. "Applications of chaos theory to shear turbulence," by L. Keefe, P. Moin, and J. Kim, *The Ubiquity of Chaos*, by S. Krasner(ed.), American Association for the Advanced Science, 1990.
30. "The structure of turbulent channel flow with passive scalar transport," by Y. Guezennec, D. Stretch and J. Kim, *Proc. of the 1990 Summer Program of the NASA-Stanford Center for Turbulence Research*, December 1990.



31. "Heat transport in near-wall region," by R. A. Antonia and J. Kim, *Proc. of the 4th Int. Symposium on transport phenomena in heat and mass transfer*, University of New South Wales, Sydney, July 14-18, 1991, *Transport Phenomena in Heat and Mass Transfer* (ed. J. A. Reizes), Elsevier Science Publishers, 1992.
32. "Direct numerical simulation of turbulent plane-Couette flow: characteristics of the large-scale structures," by M. J. Lee and J. Kim, *Proc. of Advances in Computational Fluid Dynamics*, August 29-31, 1991, Pohang, Korea.
33. "The structure of turbulence in a simulated plane Couette flow," by M. J. Lee and J. Kim, *Proc. of the Eighth Symposium on Turbulent Shear Flows*, September 9-11, 1991, Munich, Germany.
34. "On the origin of streaks in turbulent shear flows," by F. Waleffe and J. Kim, *Proc. of the Eighth Symposium on Turbulent Shear Flows*, September 9-11, 1991, Munich, Germany.
35. "Low Reynolds number effects on near-wall turbulence," by R. A. Antonia and J. Kim, *Proc. of the Eleventh Australian Fluid Mechanics Conference*, Hobart, Australia, December 14-19, 1992.
36. "Velocity and temperature derivative measurements in the near-wall region of a turbulent duct flow," by Y. Zhu, R. A. Antonia and J. Kim, *Proc. of International Conference on Near-Wall Turbulent Flows*, Tempe, AZ, March 15-17, 1993, *Near-Wall Turbulent Flows* (eds. R. M. C. So, C. G. Speziale, and B. E. Launder), Elsevier Science Publishers, 1993.
37. "Improved approximation of wall shear stress boundary conditions for large eddy simulation," by T. G. Bagwell, R. J. Adrian, R. D. Moser and J. Kim, *Proc. of International Conference on Near-Wall Turbulent Flows*, Tempe, AZ, March 15-17, 1993, *Near-Wall Turbulent Flows* (eds. R. M. C. So, C. G. Speziale, and B. E. Launder), Elsevier Science Publishers, 1993.
38. "Regeneration of near-wall turbulence structures," by J. M. Hamilton, J. Kim, and F. Waleffe, *Proc. of the Ninth Symposium on Turbulent Shear Flows*, August 16-18, 1993, Kyoto, Japan.
39. "Direct simulation of compressible wall-bounded turbulence," by G. N. Coleman, J. C. Buell, J. Kim, and R. D. Moser, *Proc. of the Ninth Symposium on Turbulent Shear Flows*, August 16-18, 1993, Kyoto, Japan.
40. "Isotropy of small scale turbulence," by R. A. Antonia and J. Kim, *Proc. of the Ninth Symposium on Turbulent Shear Flows*, August 16-18, 1993, Kyoto, Japan.
41. "Direct numerical simulation of turbulent flow over a backward-facing step," by H. Le, P. Moin, and J. Kim, *Proc. of the Ninth Symposium on Turbulent Shear Flows*, August 16-18, 1993, Kyoto, Japan.
42. "Study of turbulence physics via numerical simulations," by J. Kim, *Proc. of the 5th International Symposium on Computational Fluid Dynamics*, August 31-September 3, 1993, Sendai, Japan.
43. "On the regeneration mechanisms of near-wall turbulence," by J. Kim and James M. Hamilton, *Proc. of the Turbulence Research Association*, March 26, 1994, Seoul, Korea.
44. "A systems theory approach to the control of transitional flows," by J. Kim, S. S. Joshi and J. L. Speyer, *Proc. of the Second TRA Conference*, *Advances in Turbulence Research - 1995*, March 27-29, 1995, Pohang, Korea.
45. "A Systems Theory Approach to the Control of Transitional Flows," by S. S. Joshi, J. L. Speyer, and J. Kim, *Proc. of the SPIE Conference on Actuation and Control in Aeropropulsion*, by James Paduano (ed.), April 17-18, 1995, Orlando, FL, Vol. 2494, pp.87-102.
46. "Local isotropy of velocity and temperature derivatives," by Y. Zhu, R. A. Antonia and J. Kim, *Proc. of the 6th Asian Congress of Fluid Mechanics*, Vol. II, by Y. T. Chew and C. P. Tso (eds.), May 22-26, 1995, Singapore.

47. "A numerical study of three-dimensional boundary layers," by G. N. Coleman, J. Kim, and A. Le, *Proc. of the Tenth Symposium on Turbulent Shear Flows*, The Pennsylvania State University, University Park, Pa, August 14-16, 1995.
48. "Modelling and Control of Two Dimensional Poiseuille Flow," by S. S. Joshi, J. L. Speyer, and J. Kim, *Proc. of the 34th IEEE Conference on Decision and Control (CDC)*, New Orleans, LA, December 13-15, 1995.
49. "Subgrid-scale stress models for non-equilibrium flows," by U. Piomelli, G. N. Coleman, and J. Kim, *Proc. of International Symposium on Mathematical Modelling of Turbulence*, December 16-20, 1995, University of Tokyo, Tokyo, Japan.
50. "Direct numerical simulation of strained three-dimensional wall-bounded flows," by G. N. Coleman, J. Kim, and P. R. Spalart, AIAA-96-0655, AIAA 34th Aerospace Sciences Meeting and Exhibit, Reno, NV, January 15-18, 1996.
51. "Active drag reduction using neural networks," by D. Babcock, C. Lee, B. Gupta, J. Kim, and R. Goodman, *Proc. of International Workshop on Neural Networks for Identification, Control, Robotics, and Signal/Image Processing*, Venice, Italy, August 21-23, 1996.
52. "Application of neural network to turbulence control for drag reduction," by C. Lee, J. Kim, D. Babcock, and R. Goodman, *Proc. of Flow Control Workshop*, Cargese, Corsica, France, July 1-5, 1996.
53. "Taming near-wall streamwise vortices: A modus operandi for boundary layer control," by J. Kim, *Proc. of IUTAM Symposium on Simulation and Identification of Organized Structures in Flows*, May 25 - May 29, Copenhagen, Denmark, 1997.
54. "Control of near-wall streamwise vortices using an electromagnetic force in a conducting fluid," by H. Choi, D. Lee, J. Lim and J. Kim, AIAA-97-2059, AIAA 4th Shear Flow Control Conference, Snowmass Village, Colorado, June 29-July 2, 1997.
55. "Taming turbulence," by J. Kim, AIAA-97-1791, AIAA 28th Fluid Dynamics Conference, Snowmass Village, Colorado, June 29-July 2, 1997.
56. "Neural networks for active drag reduction in fully turbulent flows," by D. Babcock, R. Goodman, C. Lee, and J. Kim, *Proc. of Fifth International Conference on Artificial Neural Networks*, University of Cambridge, UK, July 7-9, 1997.
57. "Direct numerical simulation of decelerated wall-bounded shear flows," by G. N. Coleman, J. Kim, and P. R. Spalart, *Proc. of the Eleventh Symposium on Turbulent Shear Flows*, Institut National Polytechnique, Grenoble, France, September 8-10, 1997.
58. "How streamwise rolls and streaks self-sustain in a shear flow: Part II," by F. Waleffe and J. Kim, AIAA-98-2997, AIAA 29th Fluid Dynamics Conference, Albuquerque, New Mexico, June 15-18, 1998.
59. "Active control of turbulent boundary layers," by J. Kim, *Proc. of International Symposium on Seawater Drag Reduction*, Newport, Rhode Island, July 22-24, 1998.
60. "Active control of turbulent boundary layers for drag reduction," by J. Kim, *Proc. of IUTAM Symposium on Mechanics of Passive and Active Flow Control*, Göttingen, Germany, September 7-11, 1998.
61. "Robust reduced-order control of turbulent channel flows via distributed sensors and actuators," by L. Cortelezzi, J. L. Speyer, K. K. Lee and J. Kim, *Proc. of the 37th IEEE Conference on Decision and Control (CDC)*, Tampa, Florida, December 16-18, 1998.

62. "Near-wall turbulence structures in three-dimensional boundary layers," by A. Le, G. N. Coleman and J. Kim, *Proc. of the First International Symposium on Turbulence and Shear Flow Phenomena*, Santa Barbara, September 12-15, 1999.
63. "Reynolds-stress budgets from a wall-bounded adverse-pressure-gradient flow," by G. N. Coleman, J. Kim and P. R. Spalart, *Proc. of the Eighth European Turbulence Conference*, Barcelona, Spain, June 26-28, 2000.
64. "Controlling a linear process in nonlinear flows," by J. Kim, *Proc. of the Symposium on Smart Control of Turbulence*, Tokyo, Japan, March 5-6, 2001.
65. "Control of turbulent boundary layers," by J. Kim, *Proc. of the Ninth European Turbulence Conference*, Southampton, UK, July 2-5, 2002.
66. "A singular value analysis of boundary layer control," by J. Lim and J. Kim, *Proc. of the Third Symposium on Turbulence and Shear Flows Phenomena*, Sendai, Japan, March 25-27, 2003.
67. "Identification and control of separated boundary layers," by S-C Huang, J. Kim and J. S. Gibson, *Proceedings of the 10th European Turbulence Conference*, Trondheim, Norway, June 28-July 2, 2004.
68. "Analysis and control of boundary layer: a linear system perspective," by J. Kim and J. Lim, *Proceedings of IUTAM Symposium on One Hundred Years of Boundary Layer Research*, Goettingen, Germany, August 12-14, 2004.
69. "Understanding and controlling turbulent boundary layers: a personal odyssey," *Proceedings of the 6th KSME-JSME Thermal and Fluids Engineering Conference*, Jeju, Korea, March 20-23, 2005.
70. "Physics of wall turbulence: a perspective on boundary-layer control," by J. Kim, *Proceedings of the 2nd International Symposium on Seawater Drag Reduction*, Busan, Korea, May 23-26, 2005.
71. "Physics and control of wall turbulence," *Proceedings of the sixth D/LES*, Poitiers, France, September 12-15, 2005.
72. "Systems Theory Approach to Flow Control," *Proceedings of Whither Turbulence Prediction and Control*, Seoul, Korea, March 26-29, 2006.
73. "A hybrid WENO scheme for simulation of shock wave-boundary layer interaction," by M. Lagha, X. Zhong, J. D. Eldredge and J. Kim, AIAA-2009-1136, 2009.
74. "An evaluation of shock-capturing methods on a hypersonic boundary layer receptivity problem" by S. F. Rehman, J. D. Eldredge, X. Zhong and J. Kim, AIAA-2009-941, 2009.
75. "A numerical study of Purdue's Mach 6 tunnel with a roughness element," by P. T. Greene, J. D. Eldredge, X. Zhong and J. Kim, AIAA-2009-0174, 2009.
76. "Analysis of Germano's hybrid filter for simulation of turbulent flows," by B. Rajamani and J. Kim, *Turbulent Shear Flows and Phenomena 6*, Seoul, Korea, June 22-24, 2009.
77. "Receptivity and stability of hypersonic flow over blunt cones with thermochemical non-equilibrium," by N. Parsons, X. Zhong, J. Kim and J. Eldredge, AIAA-2010-4446, 2010.
78. "A simple and robust approach for higher order hybrid shock capturing methods," by S. Rehman, J. Eldredge, X. Zhong and J. Kim, AIAA-2010-4453, 2010.
79. "Turbulence physics of compressible boundary layers," by M. Lagha, J. Kim, J. Eldredge and X. Zhong, *Turbulent Shear Flows and Phenomena 7*, Ottawa, Canada, July 28-31, 2011.
80. "Numerical study of hypersonic flow over an isolated roughness with a high-order cut-cell method," by P. Greene, J. Eldredge, X. Zhong and J. Kim, AIAA-2011-3249, 2011.

81. "Control of wall turbulence," by J. Kim, Proceedings of JSME-CMD International Computational Mechanics Symposium (JSME-CMD ICMS 2012), Kobe, Japan, October 9-11, 2012.
82. "Numerical simulation of high-speed flows over complex geometries with a high-order multi-zone cut-cell method," by P. Greene, J. Eldredge, X. Zhong and J. Kim, AIAA-2014-0426, 2014.
83. "The effects of superhydrophobic surface on skin-friction drag," by H. Park and J. Kim, Proceedings of Workshop on Progress in Wall Turbulence: understanding and modeling, Lille, France, June 18-20, 2014.

### Papers Published in Books:

1. "Evolution of a vortical structure associated with the bursting event in a channel flow," by J. Kim, *Turbulent Shear Flows 5* (eds. F. Durst, B. E. Launder, J. L. Lumley, F. W. Schmidt, and J. H. Whitelaw), Springer-Verlag, 1987.
2. "Transport of passive scalars in a turbulent channel flow," by J. Kim and P. Moin, *Turbulent Shear Flows 6* (eds. F. Durst, B. E. Launder, J. L. Lumley, F. W. Schmidt, and J. H. Whitelaw), Springer-Verlag, 1989.
3. "Turbulence characteristics inside a turbulent spot in plane Poiseuille flow," by D. S. Henningson and J. Kim, *Turbulent Shear Flows 7* (eds. F. Durst, B. E. Launder, J. L. Lumley, F. W. Schmidt, and J. H. Whitelaw), Springer-Verlag, 1991.
4. "The structure of pressure fluctuations in turbulent shear flows," by J. Kim and M. Lee, *Turbulent Shear Flows 7* (eds. F. Durst, B. E. Launder, J. L. Lumley, F. W. Schmidt, and J. H. Whitelaw), Springer-Verlag, 1991.
5. "On the origin of streaks in turbulent shear flows," by F. Waleffe, J. Kim and J. M. Hamilton, *Turbulent Shear Flows 8* (eds. F. Durst, R. Friedrich, B. E. Launder, F. W. Schmidt, U. Schumann, and J. H. Whitelaw), Springer-Verlag, Berlin, 1993.
6. "Spectral and pseudo-spectral methods," by J. Kim, *Handbook of Fluid Dynamics and Fluid Machinery* (eds. Schetz and Fuchs), John Wiley & Sons, Inc., 1996.
7. "How streamwise rolls and streaks self-sustain in a shear flow," by F. Waleffe and J. Kim, *Self-Sustaining Mechanisms of Wall Turbulence* (ed. Panton), Computational Mechanics Publications, 1997.
8. "Taming Turbulence," by J. Kim, *Computational Fluid Dynamics Review 1998* (eds. Hafez and Oshima), World Scientific, 1998.
9. "MEMS-based active drag reduction in turbulent boundary layers," by T. Tsao, F. Jiang, C. Liu, R. Miller, S. Tung, J. Huang, B. Gupta, D. Babcock, C. Lee, Y. Tai, C. Ho, J. Kim and R. Goodman, *Microengineering Aerospace Systems* (ed. H. Helvajian), The Aerospace Press, 1999.
10. "Active control of turbulent boundary layers for drag reduction," by J. Kim, *IUTAM Symposium on Mechanics of Passive and Active Flow Control* (eds. Meier and Viswanath), Kluwer Academic Publishers, 1999.
11. "Analysis and Control of Boundary Layers: A Linear Systems Perspective," by J. Kim and J. Lim, *IUTAM Symposium on One Hundred Years of Boundary Layer Research* (eds. Meier and Sreenivasan), Springer, 2006.
12. "Physics and Control of Wall Turbulence," by J. Kim, *Direct and Large-Eddy Simulation VI* (eds. Lamballais, Friedrich, Geurts and Métais), ERCOFTAC Series, Volume 10, Springer, 2006.

### Published Reports:

1. "Investigation of separation and reattachment of a turbulent shear layer: Flow over a backward facing step," by J. Kim, S. J. Kline, and J. P. Johnston, Report MD-37, Department of Mechanical Engineering, Stanford University, April, 1978.
2. "Coherent structures and heat transport in a turbulent channel flow," by L. W. B. Browne, R. A. Antonia and J. Kim, *Report T.N.-FM 91/2*, Department of Mechanical Engineering, Univ. Newcastle, Australia.
3. "Propagation velocity and space-time correlation of perturbations in turbulent channel flow," by J. Kim and F. Hussain, NASA TM-103932, 1992.
4. "Study of turbulence structure through numerical simulations: the perspective of drag reduction," by J. Kim, in AGARD Report (R-786), AGARD FDP/VKI Special Course on "Skin Friction Drag Reduction," March 2-6, 1992, VKI, Brussels, Belgium.
5. "An efficient spectral method for simulation of incompressible flow over a flat plate," by A. Lundbladh, S. Berlin, M. Skote, C. Hildings, J. Choi, J. Kim and D. Henningson, Technical Report TR-99/11, Department of Mechanics, Royal Institute of Technology, Stockholm, Sweden, September, 1999.

### Published Research Abstracts:

1. "Three-dimensional time-dependent calculation of turbulent channel flow," by P. Moin and J. Kim, Bulletin of the American Physical Society, **25**, No.9, Nov. 1980.
2. "Investigation of flow structure in the wall region of turbulent boundary layers via a numerical simulation," by J. Kim and P. Moin, Bulletin of the American Physical Society, **25**, No.9, Nov. 1980.
3. "Effects of rotation on the turbulence structure in a fully developed channel flow," by J. Kim, Bulletin of the American Physical Society, **26**, No.9, Nov. 1981.
4. "Coherent structures of wall-bounded turbulent flows," by J. Kim, Bulletin of the American Physical Society, **27**, No.9, Nov. 1982.
5. "Effects of wall motions on turbulence structure," by J. Kim, Bulletin of the American Physical Society, **28**, No.9, Nov. 1983.
6. "Vortical structures associated with the bursting event," by J. Kim, Bulletin of the American Physical Society, **29**, No.9, Nov. 1984.
7. "Turbulence statistics from a channel flow simulation," by N. Mansour, J. Kim and P. Moin, Bulletin of the American Physical Society, **30**, No.10, Nov. 1985.
8. "Investigation of turbulence structures with a passive scalar," by J. Kim, Bulletin of the American Physical Society, **30**, No.10, Nov. 1985.
9. "New models for the large-eddy simulation of turbulent channel flows," by U. Piomelli, J. H. Ferziger, P. Moin and J. Kim, Bulletin of the American Physical Society, **31**, No.10, Nov. 1986.
10. "Effect of high shear-rate on the structure of turbulence," by M. Lee, J. Kim and P. Moin, Bulletin of the American Physical Society, **31**, No.10, Nov. 1986.
11. "The dissipation rate of the Reynolds stress tensor," by N. Mansour, J. Kim and P. Moin, Bulletin of the American Physical Society, **31**, No.10, Nov. 1986.
12. "Flow structure responsible for the bursting process," by J. Kim and P. Moin, Bulletin of the American Physical Society, **31**, No.10, Nov. 1986.
13. "Wave-growth associated with turbulent spots in plane Poiseuille flow," by D. Henningson, M. Landahl and J. Kim, Bulletin of the American Physical Society, **32**, No.10, Nov. 1987.
14. "An active-layer model for wall-bounded turbulence," by M. Landahl, J. Kim and P. Spalart, Bulletin of the American Physical Society, **32**, No.10, Nov. 1987.
15. "On propagation speeds in turbulent shear flows," by A. K. M. F. Hussain, J. Kim and P. Spalart, Bulletin of the American Physical Society, **32**, No.10, Nov. 1987.
16. "Eduction of coherent structures from simulation of shear flows," by J. Jeong, J. Kim and A. K. M. F. Hussain, Bulletin of the American Physical Society, **32**, No.10, Nov. 1987.
17. "Asymmetric characterization of conditionally averaged structures in wall bounded flows," by Y. Guezennec, U. Piomelli and J. Kim, Bulletin of the American Physical Society, **32**, No.10, Nov. 1987.
18. "Wall-layer models for large eddy simulations," by U. Piomelli, P. Moin, J. H. Ferziger and J. Kim, Bulletin of the American Physical Society, **32**, No.10, Nov. 1987.
19. "Space-time evolution of shear-layer structures in near wall turbulence," by P. H. Alfredsson, A. V. Johansson and J. Kim, Bulletin of the American Physical Society, **32**, No.10, Nov. 1987.

20. "The dimension of an attractor in turbulent Poiseuille flow," by L. Keefe, P. Moin and J. Kim, *Bulletin of the American Physical Society*, **32**, No.10, Nov. 1987.
21. "Turbulence producing structures near walls and the role of spanwise asymmetry," by A. V. Johansson, P. H. Alfredsson and J. Kim, *Bulletin of the American Physical Society*, **33**, No.10, Nov. 1988.
22. "Study of organized structures using stochastic estimation," by J. Kim, R. D. Moser and R. J. Adrian, *Bulletin of the American Physical Society*, **33**, No.10, Nov. 1988.
23. "Transition in plane Poiseuille flow with system rotation," by K. Yang and J. Kim, *Bulletin of the American Physical Society*, **33**, No.10, Nov. 1988.
24. "Characteristics of a turbulent spot in plane Poiseuille flow," by D. Henningson and J. Kim, *Bulletin of the American Physical Society*, **33**, No.10, Nov. 1988.
25. "Active turbulence control in wall-bounded flows," by H. Choi, J. Kim and P. Moin, *Bulletin of the American Physical Society*, **34**, No.10, Nov. 1989.
26. "Surface stress and related flow patterns in wall-bounded turbulent flows," by D. Stretch and J. Kim, *Bulletin of the American Physical Society*, **34**, No.10, Nov. 1989.
27. "Turbulence control for drag reduction in wall bounded flows," by H. Choi, P. Moin and J. Kim, *Bulletin of the American Physical Society*, **35**, No.10, Nov. 1990.
28. "Direct numerical simulation of turbulence over a backward facing step," by H. Le, P. Moin and J. Kim, *Bulletin of the American Physical Society*, **35**, No.10, Nov. 1990.
29. "Heat and momentum exchange mechanisms in turbulent channel flows," by D. Stretch, Y. Guezennec and J. Kim, *Bulletin of the American Physical Society*, **35**, No.10, Nov. 1990.
30. "The existence of large-scale structures in turbulent plane Couette flow," by M. Lee and J. Kim, *Bulletin of the American Physical Society*, **35**, No.10, Nov. 1990.
31. "Assessment of ideas about the streak spacing in wall bounded turbulent flows," by F. Waleffe and J. Kim, *Bulletin of the American Physical Society*, **35**, No.10, Nov. 1990.
32. "Optimal and feedback controls in wall-bounded turbulent flows," by H. Choi, R. Temam, P. Moin and J. Kim, *Bulletin of the American Physical Society*, **36**, No.10, Nov. 1991.
33. "On the self-sustaining mechanism of turbulent boundary layers," by J. Hamilton, J. Kim and F. Waleffe, *Bulletin of the American Physical Society*, **36**, No.10, Nov. 1991.
34. "Isotropy of small-scale turbulence at low Reynolds number," by J. Kim and R. A. Antonia, *Bulletin of the American Physical Society*, **36**, No.10, Nov. 1991.
35. "A fully implicit method for the unsteady incompressible Navier-Stokes Equations in Generalized Coordinate Systems," by H. Choi, P. Moin and J. Kim, *Bulletin of the American Physical Society*, **37**, No.8, Nov. 1992.
36. "The regeneration of near-wall turbulence structures," by J. Hamilton and J. Kim, *Bulletin of the American Physical Society*, **37**, No.8, Nov. 1992.
37. "Direct numerical simulation of turbulence over a backward facing step," by H. Le, P. Moin and J. Kim, *Bulletin of the American Physical Society*, **37**, No.8, Nov. 1992.
38. "Isotropy of small-scale turbulence," by J. Kim and R. A. Antonia, *Bulletin of the American Physical Society*, **37**, No.8, Nov. 1992.
39. "Direct simulation of compressible wall-bounded turbulence," by G. N. Coleman, J. Kim and R. D. Moser, *Bulletin of the American Physical Society*, **38**, No.12, Nov. 1993.



40. "Application of a Neural Network to Turbulence Control," by J. Kim, D. Babcock, B. Gupta and R. Goodman, *Bulletin of the American Physical Society*, **39**, No.9, Nov. 1994.
41. "The effect of mean streamwise vorticity on two-dimensional boundary layers," by G. N. Coleman, A. Le and J. Kim, *Bulletin of the American Physical Society*, **39**, No.9, Nov. 1994.
42. "Application of neural network to turbulence control," by C. Lee, J. Kim, D. Babcock and R. Goodman, *Bulletin of the American Physical Society*, **40**, No.12, Nov. 1995.
43. "Effects of electro-magnetic force on near-wall turbulence," by J. Kim, C. Lee, T. Berger, J. Lim and H. Choi, *Bulletin of the American Physical Society*, **40**, No.12, Nov. 1995.
44. "Reynolds-number effects on near-wall turbulence," by N. N. Mansour, J. Kim, and R. D. Moser, *Bulletin of the American Physical Society*, **40**, No.12, Nov. 1995.
45. "Effects of mean flow three-dimensionality on the subgrid-scale stresses," by U. Piomeli, G. N. Coleman and J. Kim, *Bulletin of the American Physical Society*, **40**, No.12, Nov. 1995.
46. "A numerical study of the effect of mean strain upon turbulent wall-bounded flows," by G. N. Coleman, J. Kim and P. R. Spalart, *Bulletin of the American Physical Society*, **40**, No.12, Nov. 1995.
47. "Exploring the limits of the dynamic procedure for modeling subgrid-scale stresses in LES of inhomogeneous flows," by A.-T. Le, J. Kim and G. N. Coleman, *Bulletin of the American Physical Society*, **41**, No.9, Nov. 1996.
48. "Turbulence control using electro-magnetic forces," by J. Kim, C. Lee, T. Berger, J. Lim, and H. Choi, *Bulletin of the American Physical Society*, **41**, No.9, Nov. 1996.
49. "Application of neural network to turbulence control," by C. Lee, J. Kim, D. Babcock, and R. Goodman, *Bulletin of the American Physical Society*, **41**, No.9, Nov. 1996.
50. "Control of boundary layer transition," by S. Berlin, J. Choi, J. Kim and D. Henningson, *Bulletin of the American Physical Society*, **41**, No.9, Nov. 1996.
51. "Direct numerical simulation of three-dimensional swept-wing flows," by G. Coleman, J. Kim, and P. Spalart, *Bulletin of the American Physical Society*, **41**, No.9, Nov. 1996.
52. "Feedback control of turbulent boundary layers for drag reduction," by C. Lee, J. Kim and H. Choi, *Bulletin of the American Physical Society*, **42**, No.11, Nov. 1997.
53. "Turbulent boundary layer control via the Lorentz force," by T. Berger, J. Lim, J. Kim, C. Lee and H. Choi, *Bulletin of the American Physical Society*, **42**, No.11, Nov. 1997.
54. "Robust reduced-order boundary layer controller," by L. Cortelezzi, J. L. Speyer, H. K. Lee and J. Kim, *Bulletin of the American Physical Society*, **42**, No.11, Nov. 1997.
55. "Modification of turbulence structures in a channel flow by uniform magnetic fluxes," by D. Lee, H. Choi and J. Kim, *Bulletin of the American Physical Society*, **42**, No.11, Nov. 1997.
56. "DNS of strained wall-bounded turbulence," by G. N. Coleman, J. Kim and P. R. Spalart, *Bulletin of the American Physical Society*, **42**, No.11, Nov. 1997.
57. "A numerical study of turbulence modification in shear-driven 3DBL," by A. T. Le, J. Kim and G. N. Coleman, *Bulletin of the American Physical Society*, **43**, No.9, Nov. 1998.
58. "DNS of decelerating turbulent boundary layers," by G. N. Coleman, J. Kim and P. R. Spalart, *Bulletin of the American Physical Society*, **43**, No.9, Nov. 1998.
59. "Turbulent boundary layer control using the Goore scheme," by C. Lee and J. Kim, *Bulletin of the American Physical Society*, **43**, No.9, Nov. 1998.

60. "Robust reduced-order feedback control of turbulent channel flows," by K. Lee, L. Cortelezzi, J. Kim and J. Speyer, *Bulletin of the American Physical Society*, **43**, No.9, Nov. 1998.
61. "Simulation of a flap actuator for turbulence control," by J. Mansfield and J. Kim, *Bulletin of the American Physical Society*, **43**, No.9, Nov. 1998.
62. "Controlling a linear process in turbulent channel flow," by J. Lim and J. Kim, *Bulletin of the American Physical Society*, **44**, No.8, Nov. 1999.
63. "DES of a turbulent flow over an airfoil at high angles of attack," by S-C Huang and J. Kim, *Bulletin of the American Physical Society*, **45**, No.9, Nov. 2000.
64. "Linear controllers for turbulent boundary layers," by J. Lim, S. Kang, J. Kim and J. Speyer, *Bulletin of the American Physical Society*, **45**, No.9, Nov. 2000.
65. "Manipulation of viscous sublayer for drag reduction," by C. Lee and J. Kim, *Bulletin of the American Physical Society*, **45**, No.9, Nov. 2000.
66. "Simulation of flap actuators for control of near-wall turbulence," by J. Mansfield and J. Kim, *Bulletin of the American Physical Society*, **45**, No.9, Nov. 2000.
67. "Control of turbulent boundary layers: State of the art – 2001," by J. Kim, *Bulletin of the American Physical Society*, **46**, No.10, Nov. 2001.
68. "Towards controlling separated flow past an airfoil," by S-C Huang and J. Kim, *Bulletin of the American Physical Society*, **46**, No.10, Nov. 2001.
69. "Linear optimal controllers for turbulent boundary layers," by J. Lim, J. Kim, Sung Kang and J. Speyer, *Bulletin of the American Physical Society*, **46**, No.10, Nov. 2001.
70. "Identification and Control of Separated Shear Flows," by S-C Huang and J. Kim, *Bulletin of the American Physical Society*, **47**, No.10, Nov. 2002.
71. "Opposition Control: A Linear System Perspective," by J. Lim and J. Kim, *Bulletin of the American Physical Society*, **47**, No.10, Nov. 2002.
72. "Physics of Rough-Wall Turbulent Boundary Layer," by Kiran Bhaganagar and J. Kim, *Bulletin of the American Physical Society*, **47**, No.10, Nov. 2002.
73. "Effects of Surface Roughness on Turbulent Boundary Layers," by K. Bhaganagar and J. Kim, *Bulletin of the American Physical Society*, **48**, No.10, Nov. 2003.
74. "Control of Separated Boundary Layers," by S-C Huang and J. Kim, *Bulletin of the American Physical Society*, **48**, No.10, Nov. 2003.
75. "Control and Identification of a Separated Flow," by S-C Huang, J. Kim and J. S. Gibson, *Bulletin of the American Physical Society*, **49**, No.9, Nov. 2004.
76. "Effects of hydrophobic surface on skin-friction drag," by T. Min and J. Kim, *Bulletin of the American Physical Society*, **49**, No.9, Nov. 2004.
77. "Boundary-Layer Control: In Memory of Bill Reynolds," by J. Kim, *Bulletin of the American Physical Society*, **49**, No.9, Nov. 2004.
78. "Effects of hydrophobic surface on stability and transition," by T. min and J. Kim, *Bulletin of the American Physical Society*, **50**, No.9, Nov. 2005.
79. "Sublaminar skin-friction drag in controlled channel flow," by S. Kang, T. min, J. Speyer and J. Kim, *Bulletin of the American Physical Society*, **50**, No.9, Nov. 2005.

80. "Stabilizing and destabilizing effects of finite-amplitude traveling waves in 2D and turbulent channel flows," by S. Kang, T. Min, J. Speyer and J. Kim, *Bulletin of the American Physical Society*, **51**, No.9, Nov. 2006.
81. "Towards an improved interface treatment in hybrid RANS-LES methods," by B. Rajamani and J. Kim, *Bulletin of the American Physical Society*, **51**, No.9, Nov. 2006.
82. "Sub-laminar drag in fully developed channel flow by stationary distributed blowing and suction," by J. Kim, H. Choi and J. Kim, *Bulletin of the American Physical Society*, **51**, No.9, Nov. 2006.
83. "A numerical simulation of hybrid-filtered Navier-Stokes equations," by B. Rajamani and J. Kim, *Bulletin of the American Physical Society*, **52**, No.12, Nov. 2007.
84. "Stability of a channel flow subject to blowing and suction in the form of a traveling wave," by C. Lee, T. Min and J. Kim, *Bulletin of the American Physical Society*, **52**, No.12, Nov. 2007.
85. "Further analysis of hybrid-filtered Navier-Stokes equations," by B. Rajamani and J. Kim, *Bulletin of the American Physical Society*, **53**, No.15, Nov. 2008.
86. "Effects of Mach number on near-wall turbulence structures in compressible turbulent boundary layers," by M. Lagha, J. Kim, J. Eldredge and X. Zhong, *Bulletin of the American Physical Society*, **54**, No.19, Nov. 2009.
87. "A numerical study of compressible turbulent boundary layers," by M. Lagha, J. Kim, J. Eldredge and X. Zhong, *Bulletin of the American Physical Society*, **55**, No.19, Nov. 2010.
88. by P. Kim, J. Kim, X. Zhong and J. Eldredge, "Numerical investigation of non-equilibrium effects in hypersonic turbulent boundary layers," *Bulletin of the American Physical Society*, **57**, No.17, Nov. 2012.
89. by H. Park and J. Kim, "Effects of superhydrophobic surface on laminar and turbulent flows," *Bulletin of the American Physical Society*, **57**, No.17, Nov. 2012.
90. by P. Greene, J. Eldredge, X. Zhong and J. Kim, "A multi-zone and cut-cell method for high-order numerical simulations of compressible flow over arbitrary geometries," *Bulletin of the American Physical Society*, **57**, No.17, Nov. 2012.
91. by H. Park and J. Kim, "A characterization of superhydrophobic surfaces for skin-friction drag reduction," *Bulletin of the American Physical Society*, **58**, No.18, Nov. 2013.
92. by H. Park and J. Kim, "Transient growth of disturbances in near-wall region of turbulent channel flow," *Bulletin of the American Physical Society*, **58**, No.18, Nov. 2013.

### Edited Journals, Proceedings and Reports:

1. Studying turbulence using numerical simulation databases, by P. Moin, W. C. Reynolds, and J. Kim (Eds.), Proceedings of the 1987 Summer Program of the NASA-Stanford Center for Turbulence Research, December 1987.
2. Studying turbulence using numerical simulation databases — II, by P. Moin, W. C. Reynolds, and J. Kim (Eds.), Proceedings of the 1988 Summer Program of the NASA-Stanford Center for Turbulence Research, December 1988.
3. Annual Research Briefs — 1988, by P. Moin, W. C. Reynolds, and J. Kim (Eds.), Center for Turbulence Research, February 1989.
4. Annual Research Briefs — 1989, by P. Moin, W. C. Reynolds, and J. Kim (Eds.), Center for Turbulence Research, February 1990.
5. Studying turbulence using numerical simulation databases — III, by P. Moin, W. C. Reynolds, and J. Kim (Eds.), Proceedings of the 1990 Summer Program of the NASA-Stanford Center for Turbulence Research, December 1990.
6. Annual Research Briefs — 1990, by P. Moin, W. C. Reynolds, and J. Kim (Eds.), Center for Turbulence Research, February 1991.
7. Annual Research Briefs — 1991, by P. Moin, W. C. Reynolds, and J. Kim (Eds.), Center for Turbulence Research, December 1991.
8. Studying turbulence using numerical simulation databases — IV, by P. Moin, W. C. Reynolds, and J. Kim (Eds.), Proceedings of the 1992 Summer Program of the NASA-Stanford Center for Turbulence Research, November 1992.
9. Annual Research Briefs — 1992, by P. Moin, W. C. Reynolds, and J. Kim (Eds.), Center for Turbulence Research, January 1993.
10. Physics of Fluids, **10**, Nos. 1-12, by J. Kim and L. G. Leal (Eds.), American Institute of Physics, January-December 1998.
11. Physics of Fluids, **11**, Nos. 1-12, by J. Kim and L. G. Leal (Eds.), American Institute of Physics, January-December 1999.
12. Physics of Fluids, **12**, Nos. 1-12, by J. Kim and L. G. Leal (Eds.), American Institute of Physics, January-December 2000.
13. Physics of Fluids, **13**, Nos. 1-12, by J. Kim and L. G. Leal (Eds.), American Institute of Physics, January-December 2001.
14. Physics of Fluids, **14**, Nos. 1-12, by J. Kim and L. G. Leal (Eds.), American Institute of Physics, January-December 2002.
15. Physics of Fluids, **15**, Nos. 1-12, by J. Kim and L. G. Leal(Eds.), American Institute of Physics, January-December 2003.
16. Physics of Fluids, **16**, Nos. 1-12, by J. Kim and L. G. Leal (Eds.), American Institute of Physics, January-December 2004.
17. Physics of Fluids, **17**, Nos. 1-12, by J. Kim and L. G. Leal(Eds.), American Institute of Physics, January-December 2005.
18. Physics of Fluids, **18**, Nos. 1-12, by J. Kim and L. G. Leal (Eds.), American Institute of Physics, January-December 2006.

19. Physics of Fluids, **19**, Nos. 1-12, by J. Kim and L. G. Leal (Eds.), American Institute of Physics, January-December 2007.
20. Physics of Fluids, **20**, Nos. 1-12, by J. Kim and L. G. Leal (Eds.), American Institute of Physics, January-December 2008.
21. Physics of Fluids, **21**, Nos. 1-12, by J. Kim and L. G. Leal (Eds.), American Institute of Physics, January-December 2009.
22. Physics of Fluids, **22**, Nos. 1-12, by J. Kim and L. G. Leal (Eds.), American Institute of Physics, January-December 2010.
23. Physics of Fluids, **23**, Nos. 1-12, by J. Kim and L. G. Leal (Eds.), American Institute of Physics, January-December 2011.
24. Physics of Fluids, **24**, Nos. 1-12, by J. Kim and L. G. Leal (Eds.), American Institute of Physics, January-December 2012.
25. Physics of Fluids, **25**, Nos. 1-12, by J. Kim and L. G. Leal (Eds.), American Institute of Physics, January-December 2013.

## INVITED PRESENTATIONS (Since July, 1993):

1. Invited Lectures (2 parts), Kyoto Turbulence Seminar, Kyoto, Japan, August 19-20, 1993.
2. Keynote Lecture, 5th International Symposium on Computational Fluid Dynamics, Sendai, Japan, August 31-September 3, 1993.
3. Invited Seminar, University of Southern California, December 8, 1993.
4. Keynote Lecture, TRA Turbulence Conference, Seoul, Korea, March 26, 1994.
5. Invited Seminar, Korea Advanced Institute of Science and Technology, Daejeon, Korea, March 28, 1994.
6. Invited Seminar, California Institute of Technology, November 11, 1994
7. Invited Seminar, University of California, San Diego, December 5, 1994
8. Invited Talk, Advances in Turbulence Research (International Symposium on Turbulence), Pohang, Korea, March 27-29, 1995.
9. Invited Lectures (5 parts), Japan Computer Simulation Association, Tokyo, Japan, July 24, 1995.
10. Keynote Lecture, Sixth Symposium on Computational Fluid Dynamics/Twenty-Seventh Symposium on Turbulent Flows of Japanese Fluid Mechanics Society, Osaka, Japan, July 26-28, 1995.
11. Invited Seminar, Samsung Advanced Institute of Technology, Seoul, Korea, September 18, 1995.
12. Invited Seminar, Samsung Aerospace Industries, Daeduck, Korea, September 20, 1995.
13. Invited Seminar, University of California, Irvine, February 9, 1996.
14. Invited Seminar, Seoul National University, Korea, May 27, 1996.
15. Invited Seminar, NASA Ames Research Center, October 16, 1996.
16. Invited Talk, ASME Winter Annual Meeting, Atlanta, GA, November 20, 1996.
17. Invited Seminar, Yale University, November 21, 1996.
18. Invited Seminar, Massachusetts Institute of Technology, November 22, 1996.
19. Invited Seminar, Stanford University, February 11, 1997.
20. Invited Seminar, Institute of Computational Fluid Dynamics, Tokyo, Japan, March 25, 1997.
21. Keynote Lecture, Symposium on Investigation and Control of Turbulent Flows, National Aerospace Laboratory (NAL), Japan, March 26-28, 1997.
22. Invited Talk, Korea-US Workshop on Aerospace Science, Washington, D. C., May 16-17, 1997.
23. Invited Talk, IUTAM Symposium on Simulation and Identification of Organized Structures in Flows, Lyngby, Denmark, May 25-29, 1997.
24. Invited Seminar, Royal Institute of Technology (KTH), Sweden, May 30, 1997.
25. Invited Talk, AIAA 28th Fluid Dynamics Conference, Snowmass Village, Colorado, June 29-July 2, 1997.
26. Invited Talk, International Workshop on Electromagnetic Boundary Layer Control for Saltwater Flows, Dresden, Germany, July 7-8, 1997.
27. Invited Seminar, Rockwell Science Center, Thousand Oaks, CA, July 14, 1997.

28. Invited Talk, International Workshop on the New Directions for Fluid Mechanics, Beijing, China, August 29-31, 1997.
29. Invited Seminar, Korea Research Institute of Ships and Ocean Engineering, Daeduck, Korea, September 4, 1997.
30. Invited Seminar, University of Southern California, February 4, 1998.
31. Invited Talk, 18th International Conference "Predictability: Quantifying Uncertainties in Models of Complex Phenomena," Center for Nonlinear Studies, Los Alamos National Laboratory, Albuquerque, New Mexico, May 11-15, 1998.
32. Invited Talk, AIAA 29th Fluid Dynamics Conference, Albuquerque, New Mexico, June 15-18, 1998.
33. Invited Talk, 13th U.S. National Congress of Theoretical and Applied Mechanics, Gainesville, Florida, June 22-26, 1998.
34. Invited Talk, International Symposium on Seawater Drag Reduction, Newport, Rhode Island, July 22-24, 1998.
35. Invited Seminar, Brown University, July 24, 1998.
36. Invited Talk, DNS/LES Workshop, Istanbul, Turkey, August 5-7, 1998.
37. Invited Talk, IUTAM Symposium on Mechanics of Passive and Active Control, Göttingen, Germany, September 7-11, 1998.
38. Invited Seminar, Arizona State university, October 16, 1998.
39. Invited Seminar, Princeton University, November 20, 1998.
40. Invited Talk, American Physical Society, Centennial Meeting, Atlanta, GA, March 20-26, 1999.
41. Invited Talk, ASME/JSME Fluid Engineering Meeting, San Francisco, CA, July 18-22, 1999.
42. Invited Seminar, Seoul National University, Seoul, Korea, September 20, 1999.
43. Hoefft Chair Lecture, University of Illinois, Urbana-Champaign, IL, October 21, 1999.
44. Invited Talk, Symposium on Turbulence in Science and Engineering, Ramon Areces Foundation, Madrid, Spain, November 30-December 1, 1999.
45. Invited Talk, 4th UNAM Supercomputing Conference, Mexico City, Mexico, June 27-30, 2000.
46. Invited Talk, Workshop on Organized Vortical Motions as a Basis for Boundary Layer Control, Kiev, Ukraine, September 20-22, 2000.
47. Invited Seminar, 50th Anniversary of the Fluid Mechanics Seminar, Stanford University, Stanford, CA, October 24, 2000.
48. Invited Seminar, California Institute of Technology, Pasadena, CA, November 10, 2000.
49. Invited Talk, Symposium on Smart Control of Turbulence, Tokyo, Japan, March 5-6, 2001.
50. Invited Talk, ERCOFTAC Workshop on Flow Control, Abisko, Sweden, April 24-27, 2001.
51. 2001 APS Otto Laporte Award Lecture, 54th Annual Meeting APS/DFD, San Diego, CA, November 18-20, 2001.
52. Invited Seminar, University of California, Santa Barbara, CA, November 26, 2001.
53. Invited Seminar, University of Washington, Seattle, WA, March 12, 2002.

54. Invited Lectures for Midwest Mechanics Seminar (8 lectures), March 26-May 10, 2002.
55. Invited Talk, 14th U.S. National Congress of Theoretical and Applied Mechanics, Blacksburg, Virginia, June 23-28, 2002.
56. Invited Talk, EUROMECH 9th European Turbulence Conference, Southampton, UK, July 2-5, 2002.
57. Invited Talk, AFOSR Control for Agile Autonomous Flight, Shalimar, FL, March 24-25, 2003.
58. Invited Talk, International Workshop on Flow Control by Tailored Magnetic Fields, Dresden, Germany, March 31-April 2, 2004.
59. Invited Talk, IUTAM Symposium on One Hundred Years of Boundary Layer Research, Göttingen, Germany, August 12-14, 2004.
60. Invited Talk (Keynote Lecture), the 6th KSME/JSME Thermal and Fluids Engineering Conference, Jeju, Korea, March 21-23, 2005.
61. Invited Talk (Keynote Lecture), the 2nd International Symposium on Seawater Drag Reduction, Busan, Korea, May 23-26, 2005.
62. Invited Talk, ERCOFTAC Workshop on D/LES, Poitiers, France, September 12-14, 2005.
63. Invited Seminar, University of Southampton, UK, September 16, 2005.
64. Invited Seminar, University of Arizona, Tucson, Arizona, November 10, 2005.
65. Invited Colloquium, Georgia Tech., Atlanta, Georgia, January 19, 2006.
66. Invited Talk, International Symposium on Whither Turbulence Prediction and Control, Seoul, Korea, March 26-29, 2006.
67. Invited Talk, IUTAM Symposium on Flow Control, London, UK, September 19-22, 2006.
68. Invited Seminar, Stanford University, Stanford, CA, May 29, 2007.
69. Invited Seminar, California Institute of Technology, Pasadena, CA, June 1, 2007.
70. Distinguished Scholar Lecture, Arizona State University, Tempe, AZ, October 12, 2007.
71. Invited Talk, Workshop on Wall Bounded Shear Flows: Transition and Turbulence, Issac Newton Institute for Mathematical Sciences, Cambridge University, September 8-12, 2008.
72. Invited Seminar, University of Illinois at Urbana-Champaign, October 28, 2008.
73. Keynote Lecture, Global Flow Instability and Control Symposium, Hersonissos, Crete, Greece, September 29 - Oct 2, 2009.
74. Invited Seminar, University of California, Santa Barbara, March 3, 2010.
75. Keynote Lecture, NIMS-CSE Workshop on Computational Fluid Dynamics and Computational Mathematics, Yonsei University, Seoul, Korea, September 10-11, 2010.
76. Invited Talk, US-Korea Conference 2011, Park City, UT, August 11-14, 2011.
77. Invited Talk, Turbulence Colloquium in Marseille 2011 (TCM 2011), Marseille, September 26-30, 2011.
78. Keynote Lecture, International Computational Mechanics Symposium 2012, Kobe, Japan, October 9-11, 2012.
79. Invited Talk, Directions in Computational Physics, San Diego, CA, October 12-13, 2012.



80. Keynote Lecture, KSME Fluid Engineering Division 2013 Spring Conference, Jeju, Korea, May 9-10, 2013.
81. Invited Seminar, Seoul National University, Seoul, Korea, June 7, 2013.
82. Invited Talk, International Workshop on Small-scale Turbulence, Rouen, France, July 3-5, 2013.
83. Invited Seminar, Johns Hopkins University, Baltimore, MD, May 2, 2014.