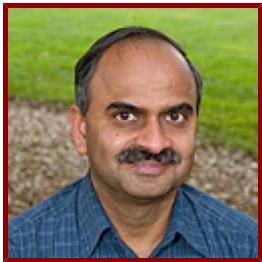


Stanford



Sanjiva Lele

Edward C. Wells Professor of the School of Engineering and Professor of Mechanical Engineering

Aeronautics and Astronautics

CONTACT INFORMATION

- **Administrator**

Renee Quiroz - Administrative Associate

Email mquiroz@stanford.edu

Tel 650-723-2867

Bio

BIO

Professor Lele's research combines numerical simulations with modeling to study fundamental unsteady flow phenomena, turbulence, flow instabilities, and flow-generated sound. Recent projects include shock-turbulent boundary layer interactions, supersonic jet noise, wind turbine aeroacoustics, wind farm modeling, aircraft contrails, multi-material mixing and multi-phase flows involving cavitation. He is also interested in developing high-fidelity computational methods for engineering applications.

ACADEMIC APPOINTMENTS

- Professor, Aeronautics and Astronautics
- Professor, Mechanical Engineering
- Member, Bio-X
- Member, Institute for Computational and Mathematical Engineering (ICME)

HONORS AND AWARDS

- AIAA Wind Energy Conference Best Paper Award with Aditya Ghate, Niranjan Ghaisas and Aaron Towne, American Institute of Aeronautics and Astronautics (2019)
- Distinguished Alumnus Award, IIT Kanpur, India (2017)
- AIAA Aeroacoustics Award, American Institute of Aeronautics & Astronautics (2016)
- AIAA Best Paper Award with David Dawson, AIAA Fluid Dynamics Technical Committee (2015)
- Associate Fellow AIAA, American Institute of Aeronautics and Astronautics (2015)
- AIAA Best Paper Award with Britton Olson, AIAA Fluid Dynamics Technical Committee (2012)
- AIAA Best Student Paper Award with William Wolf, AIAA/CEAS Aeroacoustics Conference (2011)
- Stanford Asian American Faculty Award, Stanford Asian American Faculty (2004)
- Fellow American Physical Society, American Physical Society (2001)
- RT Knapp Award with Ted Manning, ASME Fluids Engineering Division (1999)
- Presidential Young Investigator Award, National Science Foundation (1991)

- F N Frenkiel Award, American Physical Society, Division of Fluid Dynamics (1986)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Associate Editor, Journal of Fluid Mechanics (1994 - 2004)
- Associate Editor, Physical Review Fluids - American Physical Society (2021 - present)

PROFESSIONAL EDUCATION

- PhD, Cornell , Mechanical Engineering (1985)

Teaching

COURSES

2023-24

- Advanced Topics in Turbulence: ME 461 (Aut)
- Fundamentals of Acoustics: AA 201A (Spr)
- Seminar in Fluid Mechanics: ENGR 298 (Spr)

2022-23

- Advanced Fluid Mechanics - Flow Instabilities: ME 451B (Aut)
- Aerospace Computational Science: AA 113 (Win)
- Topics in Aeroacoustics: AA 201B (Spr)

2021-22

- Advanced Topics in Turbulence: ME 461 (Aut)
- Aerospace Computational Science: AA 113 (Win)
- Fundamentals of Acoustics: AA 201A (Spr)

2020-21

- Advanced Fluid Mechanics - Flow Instabilities: ME 451B (Aut)
- Aerospace Computational Science: AA 113 (Win)
- Intermediate Fluid Mechanics: ME 133 (Spr)
- Partial Differential Equations in Engineering: CME 204, ME 300B (Win)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Rahul Agrawal, Matthew Bonanni, Kevin Cherrng, Racheal Erhard, Tim Flint, Carlos Gonzalez, Fredric Lam, Clayton Little, Kimberly Liu, Tejal Shanbhag, Michael Whitmore, David Wu

Doctoral Dissertation Advisor (AC)

Anjini Chandra, Kevin Cherrng, Steven Dai, Ryan Hass, Hang Song, Albo Voci

Master's Program Advisor

Ethan Anzia, Sean Auer, Katherine Cao, Hanvit Cho, Michele Ferretti, Elaine Liu, Cooper Newsom, Venkata Brahmini Priya Pragada, Steven Salah-Eddine, Tejal Shanbhag, Kusal Upadhyay, Andrew Wang, Anonto Zaman

Doctoral (Program)

Rahul Agrawal, Lucy Brown, Aurelien Ghiglino, Olivia Martin, Omkar Shende, Jun Yamasaki

Publications

PUBLICATIONS

- **Analysis of second moments and their budgets for Richtmyer-Meshkov instability and variable-density turbulence induced by reshock** *PHYSICAL REVIEW FLUIDS*
Wong, M., Baltzer, J. R., Livescu, D., Lele, S. K.
2022; 7 (4)
- **Optimal closed-loop wake steering - Part 2: Diurnal cycle atmospheric boundary layer conditions** *WIND ENERGY SCIENCE*
Howland, M. F., Ghate, A. S., Quesada, J., Martinez, J., Zhong, W., Larranaga, F., Lele, S. K., Dabiri, J. O.
2022; 7 (1): 345–365
- **Subgrid-scale pressure field of scale-enriched large eddy simulations using Gabor modes** *PHYSICAL REVIEW FLUIDS*
Hass, R. D., Ghate, A. S., Lele, S. K.
2021; 6 (12)
- **Settling of two-way momentum and energy coupled particles subject to Boussinesq and non-Boussinesq heating** *THEORETICAL AND COMPUTATIONAL FLUID DYNAMICS*
Horwitz, J. K., Ganguli, S., Lele, S. K., Mani, A.
2021
- **Homogenized Flux-Body Force Treatment of Compressible Viscous Porous Wall Boundary Conditions** *AIAA JOURNAL*
Huang, D. Z., Wong, M., Lele, S. K., Farhat, C.
2021; 59 (6): 2045–2059
- **Optimal closed-loop wake steering - Part 1: Conventionally neutral atmospheric boundary layer conditions** *WIND ENERGY SCIENCE*
Howland, M. F., Ghate, A. S., Lele, S. K., Dabiri, J. O.
2020; 5 (4): 1315–38
- **Wind Turbine Performance in Very Large Wind Farms: Betz Analysis Revisited** *ENERGIES*
West, J. R., Lele, S. K.
2020; 13 (5)
- **Effect of tip spacing, thrust coefficient and turbine spacing in multi-rotor wind turbines and farms** *WIND ENERGY SCIENCE*
Ghaisas, N. S., Ghate, A. S., Lele, S. K.
2020; 5 (1): 51–72
- **Modelling of jet noise: a perspective from large-eddy simulations.** *Philosophical transactions. Series A, Mathematical, physical, and engineering sciences*
Bres, G. A., Lele, S. K.
2019; 377 (2159): 20190081
- **A high-order weighted compact high resolution scheme with boundary closures for compressible turbulent flows with shocks** *JOURNAL OF COMPUTATIONAL PHYSICS*
Subramaniam, A., Wong, M., Lele, S. K.
2019; 397
- **High-resolution Navier-Stokes simulations of Richtmyer-Meshkov instability with reshock** *PHYSICAL REVIEW FLUIDS*
Wong, M., Livescu, D., Lele, S. K.
2019; 4 (10)
- **Low Mach, compressibility, and finite size effects of localized uniform heat sources in a gas** *THEORETICAL AND COMPUTATIONAL FLUID DYNAMICS*
Ganguli, S., Lele, S. K.
2019; 33 (3-4): 341–58
- **Wind farm power optimization through wake steering.** *Proceedings of the National Academy of Sciences of the United States of America*
Howland, M. F., Lele, S. K., Dabiri, J. O.
2019
- **Drag of a heated sphere at low Reynolds numbers in the absence of buoyancy** *JOURNAL OF FLUID MECHANICS*

- Ganguli, S., Lele, S. K.
2019; 869: 264–91
- **Modal analysis of the laminar boundary layer instability and tonal noise of an airfoil at Reynolds number 150,000** *INTERNATIONAL JOURNAL OF AEROACOUSTICS*
Sanjose, M., Towne, A., Jaiswal, P., Moreau, S., Lele, S., Mann, A.
2019; 18 (2-3): 317–50
 - **A unified high-order Eulerian method for continuum simulations of fluid flow and of elastic-plastic deformations in solids** *JOURNAL OF COMPUTATIONAL PHYSICS*
Ghaisas, N. S., Subramaniam, A., Lele, S. K.
2018; 371: 452–82
 - **Importance of the nozzle-exit boundary-layer state in subsonic turbulent jets** *JOURNAL OF FLUID MECHANICS*
Bres, G. A., Jordan, P., Jaunet, V., Le Rallie, M., Cavalieri, A. G., Towne, A., Lele, S. K., Colonius, T., Schmidt, O. T.
2018; 851: 83–124
 - **High-Order Eulerian Simulations of Multimaterial Elastic-Plastic Flow** *JOURNAL OF FLUIDS ENGINEERING-TRANSACTIONS OF THE ASME*
Subramaniam, A., Ghaisas, N. S., Lele, S. K.
2018; 140 (5)
 - **Influence of the horizontal component of Earth's rotation on wind turbine wakes**
Howland, M. F., Ghate, A. S., Lele, S. K., IOP
IOP PUBLISHING LTD.2018
 - **Large-eddy simulation study of multi-rotor wind turbines**
Ghaisas, N. S., Ghate, A. S., Lele, S. K., IOP
IOP PUBLISHING LTD.2018
 - **Localized artificial diffusivity scheme for deflagrations and detonation waves** *COMPUTERS & FLUIDS*
Lee, C., Lele, S. K.
2017; 159: 33–52
 - **High-order localized dissipation weighted compact nonlinear scheme for shock- and interface-capturing in compressible flows** *JOURNAL OF COMPUTATIONAL PHYSICS*
Wong, M. L., Lele, S. K.
2017; 339: 179-209
 - **Unstructured Large-Eddy Simulations of Supersonic Jets** *AIAA JOURNAL*
Bres, G. A., Ham, F. E., Nichols, J. W., Lele, S. K.
2017; 55 (4): 1164-1184
 - **Instability waves in high-speed jets: near-and far-field DNS/LES data analysis** *INTERNATIONAL JOURNAL OF AEROACOUSTICS*
Ryu, J., Lele, S. K.
2015; 14 (3-4): 643-673
 - **Stabilization of a hypersonic boundary layer using a felt-metal porous coating** *JOURNAL OF FLUID MECHANICS*
Tritarelli, R. C., Lele, S. K., Fedorov, A.
2015; 769: 729-739
 - **Linear and nonlinear modelling of a theoretical travelling-wave thermoacoustic heat engine** *JOURNAL OF FLUID MECHANICS*
Scalo, C., Lele, S. K., Hesselink, L.
2015; 766
 - **Compressible turbulent channel flow with impedance boundary conditions** *PHYSICS OF FLUIDS*
Scalo, C., Bodart, J., Lele, S. K.
2015; 27 (3)
 - **Study of supersonic wave components in high-speed turbulent jets using an LES database** *JOURNAL OF SOUND AND VIBRATION*
Ryu, J., Lele, S. K., Viswanathan, K.
2014; 333 (25): 6900-6923

- **Parameterization of Boundary-Layer Transition Induced by Isolated Roughness Elements** *AIAA JOURNAL*
Bernardini, M., Pirozzoli, S., Orlandi, P., Lele, S. K.
2014; 52 (10): 2261-2269
- **On the Richtmyer-Meshkov instability evolving from a deterministic multimode planar interface** *JOURNAL OF FLUID MECHANICS*
Tritschler, V. K., Olson, B. J., Lele, S. K., Hickel, S., Hu, X. Y., Adams, N. A.
2014; 755
- **A second golden age of aeroacoustics?** *PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY A-MATHEMATICAL PHYSICAL AND ENGINEERING SCIENCES*
Lele, S. K., Nichols, J. W.
2014; 372 (2022)
- **Large-Eddy Simulations of a Normal Shock Train in a Constant-Area Isolator** *AIAA JOURNAL*
Morgan, B., Duraisamy, K., Lele, S. K.
2014; 52 (3): 539-558
- **Effect of adverse pressure gradient on high speed boundary layer transition** *PHYSICS OF FLUIDS*
Franko, K. J., Lele, S.
2014; 26 (2)
- **Numerical investigation of turbulence in reshocked Richtmyer-Meshkov unstable curtain of dense gas** *SHOCK WAVES*
Shankar, S. K., Lele, S. K.
2014; 24 (1): 79-95
- **Effects of mean flow convection, quadrupole sources and vortex shedding on airfoil overall sound pressure level** *JOURNAL OF SOUND AND VIBRATION*
Wolf, W. R., Azevedo, J. L., Lele, S. K.
2013; 332 (26): 6905-6912
- **Effects of plume-scale versus grid-scale treatment of aircraft exhaust photochemistry** *GEOPHYSICAL RESEARCH LETTERS*
Cameron, M. A., Jacobson, M. Z., Naiman, A. D., Lele, S. K.
2013; 40 (21): 5815-5820
- **Fast acoustic scattering predictions with non-uniform potential flow effects** *JOURNAL OF THE BRAZILIAN SOCIETY OF MECHANICAL SCIENCES AND ENGINEERING*
Wolf, W. R., Lele, S. K.
2013; 35 (4): 407-418
- **A mechanism for unsteady separation in over-expanded nozzle flow** *PHYSICS OF FLUIDS*
Olson, B. J., Lele, S. K.
2013; 25 (11)
- **Breakdown mechanisms and heat transfer overshoot in hypersonic zero pressure gradient boundary layers** *JOURNAL OF FLUID MECHANICS*
Franko, K. J., Lele, S. K.
2013; 730: 491-532
- **Flow physics and RANS modelling of oblique shock/turbulent boundary layer interaction** *JOURNAL OF FLUID MECHANICS*
Morgan, B., Duraisamy, K., Nguyen, N., Kawai, S., Lele, S. K.
2013; 729: 231-284
- **Directional artificial fluid properties for compressible large-eddy simulation** *JOURNAL OF COMPUTATIONAL PHYSICS*
Olson, B. J., Lele, S. K.
2013; 246: 207-220
- **Turbulent kinetic energy spectra of solar convection from New Solar Telescope observations and realistic magnetohydrodynamic simulations** *PHYSICA SCRIPTA*
Kitiashvili, I. N., Abramenko, V. I., Goode, P. R., Kosovichev, A. G., Lele, S. K., Mansour, N. N., Wray, A. A., Yurchyshyn, V. B.
2013; T155
- **UBIQUITOUS SOLAR ERUPTIONS DRIVEN BY MAGNETIZED VORTEX TUBES** *ASTROPHYSICAL JOURNAL*

Kitiashvili, I. N., Kosovichev, A. G., Lele, S. K., Mansour, N. N., Wray, A. A.
2013; 770 (1)

- **Crackle Noise in Heated Supersonic Jets** *JOURNAL OF ENGINEERING FOR GAS TURBINES AND POWER-TRANSACTIONS OF THE ASME*
Nichols, J. W., Lele, S. K., Ham, F. E., Martens, S., Spyropoulos, J. T.
2013; 135 (5)

- **Reynolds- and Mach-number effects in canonical shock-turbulence interaction** *JOURNAL OF FLUID MECHANICS*
Larsson, J., Bermejo-Moreno, I., Lele, S. K.
2013; 717: 293-321

- **On the use of the Ffowcs Williams-Hawkins equation to predict far-field jet noise from large-eddy simulations** *INTERNATIONAL JOURNAL OF AEROACOUSTICS*
Mendez, S., Shoeybi, M., Lele, S. K., Moin, P.
2013; 12 (1-2): 1-20

- **The effects of aircraft on climate and pollution. Part II: 20-year impacts of exhaust from all commercial aircraft worldwide treated individually at the subgrid scale** *FARADAY DISCUSSIONS*
Jacobson, M. Z., Wilkerson, J. T., Naiman, A. D., Lele, S. K.
2013; 165: 369-382

- **The effects of aircraft on climate and pollution, Part II: 20-year impacts of exhaust from all commercial aircraft worldwide treated individually at the subgrid scale** *Faraday Discuss.*
Jacobson, M. Z., Wilkerson, J. T., Naiman, A. D., Lele, S. K.
2013

- **Breakdown mechanisms and heat transfer overshoot in hypersonic zero pressure gradient boundary layers** *J. Fluid Mech.*
Franko, K., Lele, S. K.
2013; 730: 491-532

- **Towards full-scale numerical simulations of travelling-wave thermoacoustic Stirling engines**
Scalo, C., Lin, J., Lele, S. K., Hesselink, L.
2013

- **Flow physics and RANS modeling of oblique shock/turbulent boundary layer interaction** *J. Fluid Mech.*
Morgan, B., Duraisamy, K., Nguyen, N., Kawai, S., Lele, S. K.
2013; 729: 231-284

- **Towards full-scale numerical simulations of travelling-wave thermoacoustic Stirling engines**
Scalo, C., Lin, J., Lele, S. K., Hesselink, L.
2013

- **Assessment of wall-modeled large-eddy simulation for supersonic compression ramp flows**
Dawson, D. M., Lele, S. K., Bodart, J.
2013

- **A probabilistic ice habit model for LES of contrails**
Inamdar, A. R., Lele, S. K., Jacobson, M. Z.
2013

- **Simulations of a normal shock train in a constant area duct using wall-modeled LES**
Vane, Z. P., Lele, S. K.
2013

- **A mechanism for unsteady separation in over-expanded nozzle flow** *Phys. Fluids.*
Olson, B. J., Lele, S. K.
2013; 25 (11): 110809

- **Effects of Mean Flow Convection, Quadrupole sources and vortex shedding on airfoil overall sound pressure level** *J. Sound and Vib., to appear.*
Wolf, W. R., Azevedo, J. L. F., Lele, S. K.
2013

- **Directional artificial fluid properties for compressible large-eddy simulations** *J. Comput. Phys.*
Olson, B., J., Lele, S., K.
2013; 246: 207-220
- **The source of crackle noise in heated supersonic jets**
Nichols, J., W., Lele, S., K., Spyropoulos, J., T.
2013
- **Nozzle wall modeling in unstructured large-eddy simulations for hot supersonic jet predictions**
Bres, G., A., Ham, F., Nichols, J., W., Lele, S., K.
2013
- **Ovarian Cancer, Version 3.2012 Featured Updates to the NCCN Guidelines** *JOURNAL OF THE NATIONAL COMPREHENSIVE CANCER NETWORK*
Morgan, R. J., Alvarez, R. D., Armstrong, D. K., Burger, R. A., Castells, M., Chen, L., Copeland, L., Crispens, M. A., Gershenson, D., Gray, H., Hakam, A., Havrilesky, L. J., Johnston, et al
2012; 10 (11): 1339-1349
- **Trailing-Edge Noise Predictions Using Compressible Large-Eddy Simulation and Acoustic Analogy** *AIAA JOURNAL*
Wolf, W. R., Lele, S. K.
2012; 50 (11): 2423-2434
- **Convective effects and the role of quadrupole sources for aerofoil aeroacoustics** *JOURNAL OF FLUID MECHANICS*
Wolf, W. R., Azevedo, J. L., Lele, S. K.
2012; 708: 502-538
- **Interaction of a converging spherical shock wave with isotropic turbulence** *PHYSICS OF FLUIDS*
Bhagatwala, A., Lele, S. K.
2012; 24 (8)
- **Vortex tubes of turbulent solar convection** *PHYSICA SCRIPTA*
Kitiashvili, I. N., Kosovichev, A. G., Mansour, N. N., Lele, S. K., Wray, A. A.
2012; 86 (1)
- **Large-Eddy Simulations of Perfectly Expanded Supersonic Jets Using an Unstructured Solver** *48th AIAA Aerospace Sciences Meeting*
Mendez, S., Shoeybi, M., Sharma, A., Ham, F. E., Lele, S. K., Moin, P.
AMER INST AERONAUTICS ASTRONAUTICS.2012: 1103–18
- **Investigation of bubble-bubble interaction and shock-reflection in homogeneous bubbly flow**
Lee, J., Lele, S., K.
2012
- **CRACKLE NOISE IN HEATED SUPERSONIC JETS** *ASME Turbo Expo 2012*
Nichols, J. W., Lele, S. K., Ham, F. E., Martens, S., Spyropoulos, J. T.
AMER SOC MECHANICAL ENGINEERS.2012: 337–345
- **Effects of Mean Flow Convection and Quadrupole Sources on Airfoil Trailing Edge Noise**
Wolf, W., Azevedo, J. L., Lele, S.
2012
- **Interaction of converging spherical shock wave with isotropic turbulence** *Physics of Fluids*
Bhagatwala, A., Lele, S., K.
2012; 24 (8): 21
- **Large-eddy simulation for supersonic rectangular jet noise prediction: effects of chevrons**
Nichols, J., Lele, S., Moin, P., Ham, F., Brès, G., Bridges, J.
2012
- **Investigation of Noise Generated by a DU96 Airfoil**
Wolf, W., Azevedo, J. L., Lele, S.
2012

- **Large-eddy and RANS simulations of normal shock train in a constant area isolator**
Morgan, B., Duraisamy, K., Lele, S., K.
2012
- **Large-eddy simulation of perfectly expanded supersonic jets using unstructured solver AIAA J.**
Mendez, S., Shoeybi, M., Sharma, A., Ham, F., E., Lele, S., K., Moin, P.
2012; 50: 1103-1118
- **Low Frequency Unsteadiness in Nozzle Flow Separation**
Olson, B., Lele, S.
2012
- **Aeroacoustics of a supersonic rectangular jet: experiments and LES predictions**
Nichols, J., W., Ham, F., Lele, S., K., Bridges, J., E.
2012
- **Quadrupole Noise in Turbulent Wake Interaction Problems**
Yu, C., Wolf, W., Lele, S.
2012
- **Towards Best Practices for Jet Noise Predictions with Unstructured Large Eddy Simulations**
Brès, G., Nichols, J., Lele, S., Ham, F.
2012
- **Crackle noise in heated supersonic jets**
Nichols, J., W., Lele, S., K., Ham, F., E., Marten, S., Spyropoulos, J., T.
2012
- **Crackle noise in heated supersonic jets J. Eng. Gas Turbines & Power, GTP-12-1155.**
Nichols, J., W., Lele, S., K., Ham, F., E., Martens, S., Spyropoulos, J., T.
2012
- **Unstructured Large Eddy Simulation of a Hot Supersonic Over-Expanded Jet with Chevrons**
Brès, G., Nichols, J., Lele, S., Ham, F., Schlinker, R., Reba, R.
2012
- **Directional artificial bulk viscosity for shock capturing on high aspect ratio grids Comput. Science & Discovery**
Olson, B., J., Lele, S., K.
2012; 5: 14008
- **Effects of heating on noise radiation from turbulent mixing layers with initially laminar and turbulent boundary layers**
Sharma, A., Lele, S., K.
2012
- **Wideband fast multipole boundary element method: Application to acoustic scattering from aerodynamic bodies INTERNATIONAL JOURNAL FOR NUMERICAL METHODS IN FLUIDS**
Wolf, W. R., Lele, S. K.
2011; 67 (12): 2108-2129
- **Non-normal global modes of high-speed jets INTERNATIONAL JOURNAL OF SPRAY AND COMBUSTION DYNAMICS**
Nichols, J. W., Lele, S. K.
2011; 3 (4): 285-301
- **Large eddy simulations of contrail development: Sensitivity to initial and ambient conditions over first twenty minutes JOURNAL OF GEOPHYSICAL RESEARCH-ATMOSPHERES**
Naiman, A. D., Lele, S. K., Jacobson, M. Z.
2011; 116
- **Nonlinear effects in the combined Rayleigh-Taylor/Kelvin-Helmholtz instability PHYSICS OF FLUIDS**
Olson, B. J., Larsson, J., Lele, S. K., Cook, A. W.

2011; 23 (11)

● **Vertical mixing of commercial aviation emissions from cruise altitude to the surface** *JOURNAL OF GEOPHYSICAL RESEARCH-ATMOSPHERES*

Whitt, D. B., Jacobson, M. Z., Wilkerson, J. T., Naiman, A. D., Lele, S. K.

2011; 116

● **Aeroacoustic Integrals Accelerated by Fast Multipole Method** *AIAA JOURNAL*

Wolf, W. R., Lele, S. K.

2011; 49 (7): 1466-1477

● **The effects of aircraft on climate and pollution. Part I: Numerical methods for treating the subgrid evolution of discrete size- and composition-resolved contrails from all commercial flights worldwide** *JOURNAL OF COMPUTATIONAL PHYSICS*

Jacobson, M. Z., Wilkerson, J. T., Naiman, A. D., Lele, S. K.

2011; 230 (12): 5115-5132

● **Sound generation due to unsteady motion of a cylinder** *PHYSICS OF FLUIDS*

Sharma, A., Lele, S. K.

2011; 23 (4)

● **Improving Low-Frequency Characteristics of Recycling/Rescaling Inflow Turbulence Generation** *AIAA JOURNAL*

Morgan, B., Larsson, J., Kawai, S., Lele, S. K.

2011; 49 (3): 582-597

● **Interaction of a Taylor blast wave with isotropic turbulence** *PHYSICS OF FLUIDS*

Bhagatwala, A., Lele, S. K.

2011; 23 (3)

● **Two-dimensional viscous flow simulation of a shock accelerated heavy gas cylinder** *PHYSICS OF FLUIDS*

Shankar, S. K., Kawai, S., Lele, S. K.

2011; 23 (2)

● **Global modes and transient response of a cold supersonic jet** *JOURNAL OF FLUID MECHANICS*

Nichols, J. W., Lele, S. K.

2011; 669: 225-241

● **Epithelial Ovarian Cancer** *JOURNAL OF THE NATIONAL COMPREHENSIVE CANCER NETWORK*

Morgan, R. J., Alvarez, R. D., Armstrong, D. K., Boston, B., Burger, R. A., Chen, L., Copeland, L., Crispens, M. A., Gershenson, D., Gray, H. J., Grigsby, P. W., Hakam, A., Havrilesky, et al

2011; 9 (1): 82-113

● **NOISE PREDICTION OF PRESSURE-MISMATCHED JETS USING UNSTRUCTURED LARGE EDDY SIMULATION** *ASME Turbo Expo 2011*

Khalighi, Y., Ham, F., Moin, P., Lele, S. K., Schlinker, R. H.

AMER SOC MECHANICAL ENGINEERS.2011: 381–387

● **Effects of heating on noise radiation from a two-dimensional mixing layer: direct computation and acoustic analogy predictions**

Sharma, A., Lele, S., K.

2011

● **Large eddy simulation of an over-expanded planar nozzle**

Olson, B., Lele, S., K.

2011

● **High-fidelity large-eddy simulation for supersonic rectangular jet noise prediction**

Nichols, J., Ham, F., Lele, S., K.

2011

● **Large eddy simulation of a Mach 2.9 turbulent boundary layer over a 24 deg compression ramp**

Dawson, D., Kawai, S., Lele, S., K.

2011

● **Analysis and correction of errors generated by slowly moving shocks**

Johnsen, E., Lele, S., K.

2011

- **Large eddy simulation of persistent aircraft contrails**

Naiman, A., D., Lele, S., K., Jacobson, M., Z

2011

- **Unstructured large-eddy simulation for prediction of noise issued from turbulent jets in various configurations**

Khalighi, Y., Nichols, J., Lele, S., K., Ham, F., Moin, P.

2011

- **Direct simulation of transition and heat-transfer overshoot in a Mach 6 flat plate boundary layer**

Bhaskaran, R., Franko, K., Lele, S., K.

2011

- **LES of tripped super-critical cylinder flow: towards tandem cylinder noise prediction**

Yu, C., Wolf, W., Lele, S., K.

2011

- **Trailing edge noise predictions using compressible LES and acoustic analogy**

Wolf, W., Lele, S., K.

2011

- **Heat transfer prediction in high pressure turbine cascade with free-stream turbulence using LES**

Bhaskaran, R., Lele, S., K.

2011

- **A parametric investigation of oblique shockwave/turbulent boundary layer interaction using LES**

Morgan, B., Kawai, S., Lele, S., K.

2011

- **Large-eddy simulation of supersonic, turbulent mixing layers downstream of a splitter plate**

Sharma, A., Lele, S., K.

2011

- **Effect of aircraft on climate and pollution. Part I: Numerical methods for treating the subgrid evolution of discrete size- and composition-resolved contrails from all commercial flights worldwide *J. Computational Phys.***

Jacobson, M., Z., Wilkerson, J., T., Naiman, A., D., Lele, S., K.

2011; 230 (12): 5115-5132

- **Cervical Cancer Screening *JOURNAL OF THE NATIONAL COMPREHENSIVE CANCER NETWORK***

Partridge, E. E., Abu-Rustum, N. R., Campos, S. M., Fahey, P. J., Farmer, M., Garcia, R. L., Giuliano, A., Jones, H. W., Lele, S. M., Lieberman, R. W., Massad, S. L., Morgan, M. A., Reynolds, et al

2010; 8 (12): 1358-1386

- **Acoustic Analogy Formulations Accelerated by Fast Multipole Method for Two-Dimensional Aeroacoustic Problems *AIAA JOURNAL***

Wolf, W. R., Lele, S. K.

2010; 48 (10): 2274-2285

- **Large-Eddy Simulation of Jet Mixing in Supersonic Crossflows *19th AIAA Computational Fluid Dynamics Conference***

Kawai, S., Lele, S. K.

AMER INST AERONAUT ASTRONAUT.2010: 2063–83

- **Investigation and modeling of bubble-bubble interaction effect in homogeneous bubbly flows *PHYSICS OF FLUIDS***

Seo, J. H., Lele, S. K., Tryggvason, G.

2010; 22 (6)

- **Large eddy simulation of free-stream turbulence effects on heat transfer to a high-pressure turbine cascade *JOURNAL OF TURBULENCE***

Bhaskaran, R., Lele, S. K.

2010; 11 (6): 1-15

- **Assessment of localized artificial diffusivity scheme for large-eddy simulation of compressible turbulent flows** *JOURNAL OF COMPUTATIONAL PHYSICS*
Kawai, S., Shankar, S. K., Lele, S. K.
2010; 229 (5): 1739-1762
- **Assessment of high-resolution methods for numerical simulations of compressible turbulence with shock waves** *JOURNAL OF COMPUTATIONAL PHYSICS*
Johnsen, E., Larsson, J., Bhagatwala, A. V., Cabot, W. H., Moin, P., Olson, B. J., Rawat, P. S., Shankar, S. K., Sjoegreen, B., Yee, H. C., Zhong, X., Lele, S. K.
2010; 229 (4): 1213-1237
- **Compact adaptive-grid scheme for high numerical resolution simulations of isotachophoresis** *JOURNAL OF CHROMATOGRAPHY A*
Bercovici, M., Lele, S. K., Santiago, J. G.
2010; 1217 (4): 588-599
- **Effect of transport modeling on hypersonic cooled wall boundary layer stability** *7th IUTAM Symposium on Laminar-Turbulent Transition*
Franko, K., Lele, S.
SPRINGER.2010: 489–492
- **Large-eddy simulations of perfectly-expanded supersonic jets: quality assessment and validation**
Mendez, S., Shoeybi, M., Sharma, A., Ham, F., Lele, S., K., Moin, P.
2010
- **Large eddy simulation of an oblique shock impinging on a turbulent boundary layer**
Morgan, B., Kawai, S., Lele, S., K.
2010
- **Numerical simulation of multicomponent shock accelerated flows and mixing using localized artificial diffusivity method**
Shankar, S., Kawai, S., Lele, S., K.
2010
- **Far-field filtering and source-imaging for the study of jet noise**
Koenig, M., Cavalieri, A., Jordan, P., Papamoschou, D., Samimy, M., Lele, S.
2010
- **Fast acoustic scattering simulations with non-uniform potential flow effects**
Wolf, W., Lele, S., K.
2010
- **Effect of chemistry modeling on hypersonic boundary layer linear stability prediction**
Franko, K., Lele, S., K., MacCormack, R., W.
2010
- **Parameterization of subgrid plume dilution for use in large-scale atmospheric simulations** *ATMOSPHERIC CHEMISTRY AND PHYSICS*
Naiman, A. D., Lele, S. K., Wilkerson, J. T., Jacobson, M. Z.
2010; 10 (5): 2551-2560
- **Analysis of emission data from global commercial aviation: 2004 and 2006** *ATMOSPHERIC CHEMISTRY AND PHYSICS*
Wilkerson, J. T., Jacobson, M. Z., Malwitz, A., Balasubramanian, S., Wayson, R., Fleming, G., Naiman, A. D., Lele, S. K.
2010; 10 (13): 6391-6408
- **UNSTRUCTURED LARGE EDDY SIMULATION TECHNOLOGY FOR PREDICTION AND CONTROL OF JET NOISE** *ASME Turbo Expo 2010*
Khalighi, Y., Ham, F., Moin, P., Lele, S. K., Colonius, T., Schlinker, R. H., Reba, R. A., Simonich, J.
AMER SOC MECHANICAL ENGINEERS.2010: 57–70
- **Sources of high-speed jet noise: analysis of LES data and modeling** *IUTAM Symposium on Computational Aero-Acoustics for Aircraft Noise Prediction*
Lele, S. K., Mendez, S., Ryu, J., Nichols, J., Shoeybi, M., Moin, P.
ELSEVIER SCIENCE BV.2010: 84–93
- **Direct numerical simulation of canonical shock/turbulence interaction** *PHYSICS OF FLUIDS*
Larsson, J., Lele, S. K.
2009; 21 (12)

- **The dynamics of nonlinear instability waves in laminar heated and unheated compressible mixing layers** *PHYSICS OF FLUIDS*
Cheung, L. C., Lele, S. K.
2009; 21 (9)
- **A modified artificial viscosity approach for compressible turbulence simulations** *JOURNAL OF COMPUTATIONAL PHYSICS*
Bhagatwala, A., Lele, S. K.
2009; 228 (14): 4965-4969
- **On the growth and propagation of linear instability waves in compressible turbulent jets** *PHYSICS OF FLUIDS*
Ray, P. K., Cheung, L. C., Lele, S. K.
2009; 21 (5)
- **Linear and nonlinear processes in two-dimensional mixing layer dynamics and sound radiation** *JOURNAL OF FLUID MECHANICS*
Cheung, L. C., Lele, S. K.
2009; 625: 321-351
- **Open source simulation tool for electrophoretic stacking, focusing, and separation** *JOURNAL OF CHROMATOGRAPHY A*
Bercovici, M., Lele, S. K., Santiago, J. G.
2009; 1216 (6): 1008-1018
- **Numerical Experiments with Shock-Turbulence Interaction** *3rd International Conference on Numerical Modeling of Space Plasma Flows*
Lele, S. K., Larsson, J., Bhagatwala, A., Moin, P.
ASTRONOMICAL SOC PACIFIC.2009: 31–41
- **LES of compressible turbulent flows: assessment of compact differencing with localized artificial diffusivity scheme**
Kawai, S., Shankar, S., K., Lele, S., K.
2009
- **Assessment of fast multipole method formulations for acoustic scattering**
Wolf, W., Lele, S., K.
2009
- **Large-eddy simulation of jet mixing in a supersonic turbulent crossflow**
Kawai, S., Lele, S., K.
2009
- **Noise predictions from cold high-speed turbulent jets using large-eddy simulation**
Ham, F., Sharma, A., Shoeybi, M., Lele, S., K., Moin, P., van der Weide, E.
2009
- **Fast field solutions in acoustic analogy formulations**
Wolf, W., Lele, S., K.
2009
- **Direct numerical simulations of canonical shock/turbulence interaction**
Larsson, J., Lele, S., K.
2009
- **A low-order contrail model to use with global-scale climate models**
Naiman, A., D., Lele, S., K., Wilkerson, J., T., Jacobson, M., Z.
2009
- **Numerical experiments with shock-turbulence interaction**
Lele, S., K., Larsson, J., Bhagatwala, A., Moin, P.
edited by Pogorelov, Nikolai, V., Audit, E., Colella, P.
2009
- **Shock-turbulence Interaction: What we know and what we can learn from peta-scale Simulations**
Lele, S., K., Larsson, J.
2009

- **Large eddy simulation of free-stream turbulence effects on heat-transfer to a high pressure turbine cascade**
Bhaskaran, R., Lele, S., K.
2009
- **Shock-turbulence interaction: What we know and what we can learn from peta-scale simulations** *5th Annual Conference of Scientific Discovery through Advanced Computing (SciDAC 2009)*
Lele, S. K., Larsson, J.
IOP PUBLISHING LTD.2009
- **Low-frequency sound sources in high-speed turbulent jets** *JOURNAL OF FLUID MECHANICS*
Bodony, D. J., Lele, S. K.
2008; 617: 231-253
- **Localized artificial diffusivity scheme for discontinuity capturing on curvilinear meshes** *JOURNAL OF COMPUTATIONAL PHYSICS*
Kawai, S., Lele, S. K.
2008; 227 (22): 9498-9526
- **Computational framework for coupling compressible and low Mach number codes** *AIAA JOURNAL*
Peet, Y. V., Lele, S. K.
2008; 46 (8): 1990-2001
- **Evolution of isolated turbulent trailing vortices** *PHYSICS OF FLUIDS*
Duraisamy, K., Lele, S. K.
2008; 20 (3)
- **Current status of jet noise predictions using large-eddy simulation** *AIAA 44th Aerospace Sciences Meeting and Exhibit*
Bodony, D. J., Lele, S. K.
AMER INST AERONAUT ASTRONAUT.2008: 364-80
- **NEAR FIELD OF FILM COOLING JET ISSUED INTO A FLAT PLATE BOUNDARY LAYER: LES STUDY** *53rd ASME Turbo Expo 2008*
Peet, Y. V., Lele, S. K.
AMER SOC MECHANICAL ENGINEERS.2008: 409-418
- **Sound generation due to transient motion of a bluff body: direct computation and acoustic analogy predictions**
Sharma, A., Lele, S., K.
2008
- **Simulation strategies for shock-turbulence interaction**
Cook, A., W., Larsson, J., Cabot, W., H., Lele, S., K.
2008
- **Development of large eddy simulation for aero-thermal prediction in high-pressure turbine cascade**
Bhaskaran, R., Lele, S., K.
2008
- **Mechanisms of jet mixing in a supersonic crossflow: a study using large-eddy simulation**
Kawai, S., Lele, S., K.
2008
- **Fast multipole boundary element method for sound scattering from aerodynamic bodies**
Wolf, W., R., Lele, S., K.
2008
- **Investigation of the role of instability waves in jet noise radiation**
Ryu, J., Lele, S., K., Viswanathan, K.
2008
- **Toward petascale shock/turbulence computations** *4th Annual Scientific Discovery Through Advanced Computing Conference (SciDAC 2008)*
Larsson, J., Johnsen, E., Lele, S. K., Moin, P.
IOP PUBLISHING LTD.2008

- **Stagnation-point flow under free-stream turbulence** *JOURNAL OF FLUID MECHANICS*
Xiong, Z., Lele, S. K.
2007; 590: 1-33
- **Sound generated by instability wave/shock-cell interaction in supersonic jets** *JOURNAL OF FLUID MECHANICS*
Ray, P. K., Lele, S. K.
2007; 587: 173-215
- **Interaction of vortex wakes and buoyant jets: A study of two-dimensional dynamics** *PHYSICS OF FLUIDS*
Shirgaonkar, A. A., Lele, S. K.
2007; 19 (8)
- **An artificial nonlinear diffusivity method for supersonic reacting flows with shocks** *JOURNAL OF COMPUTATIONAL PHYSICS*
Fiorina, B., Lele, S. K.
2007; 222 (1): 246-264
- **Leading-edge effects in bypass transition** *JOURNAL OF FLUID MECHANICS*
Nagarajan, S., Lele, S. K., FERZIGER, J. H.
2007; 572: 471-504
- **Computational issues and algorithm assessment for shock/turbulence interaction problems** *3rd Annual Scientific Discovery through Advanced Computing Conference (SciDAC 2007)*
Larsson, J., Cook, A., Lele, S. K., Moin, P., Cabot, B., Sjoegreen, B., Yee, H., Zhong, X.
IOP PUBLISHING LTD.2007
- **Computational issues and algorithm assessment for shock-turbulence interaction problems**
Larsson, J., Cook, A., Lele, S., K., Moin, P., Cabot, B., Sjogreen, B.
2007
- **Noise radiation predictions from jet instability waves using a hybrid nonlinear PSE-acoustic analogy**
Cheung, L., C., Bodony, D., J., Lele, S., K.
2007
- **Identification of instability waves in high speed turbulent jets**
Ryu, J., Lele, S., K., Viswanathan, K.
2007
- **Robustness of acoustic analogies for predicting mixing-layer noise** *AIAA JOURNAL*
Samanta, A., Freund, J. B., Wei, M., Lele, S. K.
2006; 44 (11): 2780-2786
- **Computational acoustics in spherical geometry: Steps toward validating helioseismology** *ASTROPHYSICAL JOURNAL*
Hanasoge, S. M., Larsen, R. M., Duvall, T. L., DeRosa, M. L., Hurlbert, N. E., Schou, J., Roth, M., Christensen-Dalsgaard, J., Lele, S. K.
2006; 648 (2): 1268-1275
- **On the extension of the Boussinesq approximation for inertia dominated flows** *PHYSICS OF FLUIDS*
Shirgaonkar, A. A., Lele, S. K.
2006; 18 (6)
- **Computational prediction of flow-generated sound** *ANNUAL REVIEW OF FLUID MECHANICS*
Wang, M., Freund, J. B., Lele, S. K.
2006; 38: 483-512
- **Investigating broadband shock-associated noise of axisymmetric jets using large-eddy simulation**
Bodony, D., J., Ryu, J., Lele, S., K.
2006
- **Prediction of sound generated by a pitching airfoil: a comparison of RANS and LES**
Nagarajan, S., Hahn, S., Lele, S., K.
2006

- **Far-field Jet Acoustics *LES for Acoustics***
Bodony, D., J., Lele, S., K.
edited by Wagner, C., Hutt, T., Sagaut, P.
Cambridge University Press..2006: 1
- **On extension of the Boussinesq approximation for inertia dominated flows *Phys. Fluids***
Shirgaonkar, A., Lele, S., K.
2006; 18: 066601, (12 pages)
- **Review of the current status of jet noise predictions using large-eddy simulation**
Bodony, D., J., Lele, S., K.
2006
- **Numerical investigations of a transverse jet in a supersonic crossflow using large-eddy simulation**
Fiorina, B., Lele, S., K.
2006
- **Large-eddy simulation of film-cooling flow above a flat plate from inclined cylindrical holes**
Iourokina, I., Lele, S., K.
2006
- **Large-eddy simulation of film-cooling flows in a model turbine blade leading edge**
Iourokina, I., Lele, S., K.
2006
- **Large-eddy simulations of early stage contrails: effect of atmospheric properties**
Shirgaonkar, A., Lele, S., K.
2006
- **Sound generated by instability wave/shock-cell interaction in supersonic jets**
Ray, P., Lele, S., K.
2006
- **LARGE EDDY SIMULATION OF FILM COOLING FLOW ABOVE A FLAT PLATE FROM INCLINED CYLINDRICAL HOLES *2nd US-European Fluids Engineering Division Summer Meeting/14th International Conference on Nuclear Engineering***
Iourokina, I. V., Lele, S. K.
AMER SOC MECHANICAL ENGINEERS.2006: 817–825
- **On using large-eddy simulation for the prediction of noise from cold and heated turbulent jets (vol 17, pg 085103, 2005) *PHYSICS OF FLUIDS***
Bodony, D. J., Lele, S. K.
2005; 17 (11)
- **Receptivity of the compressible mixing layer *JOURNAL OF FLUID MECHANICS***
Barone, M. F., Lele, S. K.
2005; 540: 301-335
- **On using large-eddy simulation for the prediction of noise from cold and heated turbulent jets *PHYSICS OF FLUIDS***
Bodony, D. J., Lele, S. K.
2005; 17 (8)
- **New answers on the interaction between polymers and vortices in turbulent flows *FLOW TURBULENCE AND COMBUSTION***
Dubief, Y., Terrapon, V. E., White, C. M., Shaqfeh, E. S., Moin, P., Lele, S. K.
2005; 74 (4): 311-329
- **Convective and absolute electrokinetic instability with conductivity gradients *JOURNAL OF FLUID MECHANICS***
Chen, C. H., Lin, H., Lele, S. K., Santiago, J. G.
2005; 524: 263-303
- **Direct numerical simulation of polymer-induced drag reduction in turbulent boundary layer flow *PHYSICS OF FLUIDS***
Dimitropoulos, C. D., Dubief, Y., Shaqfeh, E. S., Moin, P., Lele, S. K.

2005; 17 (1)

- **Phased-array models of shock-cell noise sources**

Lele, S., K.
2005

- **Towards large-eddy simulation of film-cooling flows in a model turbine blade leading edge**

Iourokina, I., Lele, S., K.
2005

- **Sound generation by unsteady airfoil motions: a study using direct computation and acoustic analogy**

Nagarajan, S., Lele, S., K.
2005

- **Generation of low frequency sound in turbulent jets**

Bodony, D., J., Lele, S., K.
2005

- **Simulations of aircraft wake-exhaust mixing using LES: contrail formation in the near-field**

Shirgaonkar, A., Lele, S., K.
2005

- **Aeroacoustics of high-speed jets: a perspective from numerical simulations**

Lele, S., K.
edited by Humphrey, J., Gatski, T.
2005

- **High-speed jet aeroacoustics: a perspective from numerical simulations**

Lele, S., K.
edited by Humphrey, J., Gatski, T.
2005

- **Spatio-temporal multi-scale PSE for shear layer dynamics and acoustic radiation**

Cheung, L., C., Lele, S., K.
2005

- **Distortion of upstream disturbances in a Hiemenz boundary layer *JOURNAL OF FLUID MECHANICS***

Xiong, Z. M., Lele, S. K.
2004; 519: 201-232

- **On the computation of space-time correlations by large-eddy simulation *PHYSICS OF FLUIDS***

He, G. W., Wang, M., Lele, S. K.
2004; 16 (11): 3859-3867

- **Simple method for generating inflow turbulence *AIAA JOURNAL***

Xiong, Z., Nagarajan, S., Lele, S. K.
2004; 42 (10): 2164-2166

- **On the coherent drag-reducing and turbulence-enhancing behaviour of polymers in wall flows *JOURNAL OF FLUID MECHANICS***

Dubief, Y., White, C. M., Terrapon, V. E., Shaqfeh, E. S., Moin, P., Lele, S. K.
2004; 514: 271-280

- **Computational aeroacoustics: progress on nonlinear problems of sound generation *PROGRESS IN AEROSPACE SCIENCES***

Colonius, T., Lele, S. K.
2004; 40 (6): 345-416

- **Simulated polymer stretch in a turbulent flow using Brownian dynamics *JOURNAL OF FLUID MECHANICS***

Terrapon, V. E., Dubief, Y., Moin, P., Shaqfeh, E. S., Lele, S. K.
2004; 504: 61-71

- **Noise radiation from high-speed jets: Some insights from numerical simulations** *5th International ERCOFTAC Workshop on Direct and Large-Eddy Simulation*
Lele, S. K.
SPRINGER.2004: 415–430
- **Acoustic radiation from subsonic and supersonic mixing layers with nonlinear PSE**
Cheung, Lawrence, C., Lele, S., K.
2004
- **Computational Aeroacoustics: a review of numerical approaches and progress in nonlinear problems of sound generation** *Progress in Aerospace Sciences*
Lele, S., K., Colonius, T.
2004; 6 (40): 345-416
- **On sound generated by instability wave-shock cell interaction in supersonic jets**
Ray, P., Cheung, Lawrence, C., Lele, S., K.
2004
- **Jet noise prediction of cold and hot subsonic jets using large-eddy simulation**
Bodony, D., Lele, S., K.
2004
- **A robust high-order compact method for large eddy simulation** *JOURNAL OF COMPUTATIONAL PHYSICS*
Nagarajan, S., Lele, S. K., FERZIGER, J. H.
2003; 191 (2): 392-419
- **Shock leakage through an unsteady vortex-laden mixing layer: application to jet screech** *JOURNAL OF FLUID MECHANICS*
Suzuki, T., Lele, S. K.
2003; 490: 139-167
- **Direct numerical simulation of stagnation region flow and heat transfer with free-stream turbulence** *PHYSICS OF FLUIDS*
Bae, S. W., Lele, S. K., Sung, H. J.
2003; 15 (6): 1462-1484
- **Green's functions for a source in a mixing layer: direct waves, refracted arrival waves and instability waves** *JOURNAL OF FLUID MECHANICS*
Suzuki, T., Lele, S. K.
2003; 477: 89-128
- **Green's functions for a source in a boundary layer: direct waves, channelled waves and diffracted waves** *JOURNAL OF FLUID MECHANICS*
Suzuki, T., Lele, S. K.
2003; 477: 129-173
- **Application of Adjoint Solutions to the Receptivity Problem in Compressible Mixing Layers**
Barone, M., F., Lele, S., K.
2003
- **Simulation and analogies of stagnation point heat transfer under free-stream turbulence**
Xiong, Z., Lele, S., K.
2003
- **The noise radiated by high-speed jets: some insights from numerical simulations**
Lele, S., K.
2003
- **Sound Generation Mechanism of Shock-Associated Noise**
Lui, C., Lele, S., K.
2003
- **A Statistical Subgrid Scale Noise Model: Formulation**
Bodony, D., Lele, S., K.
2003

- **A highly accurate technique for the treatment of flow equations at the polar axis in cylindrical coordinates using series expansions** *JOURNAL OF COMPUTATIONAL PHYSICS*
Constantinescu, G. S., Lele, S. K.
2002; 183 (1): 165-186
- **Refracted arrival waves in a zone of silence from a finite thickness mixing layer** *JOURNAL OF THE ACOUSTICAL SOCIETY OF AMERICA*
Suzuki, T., Lele, S. K.
2002; 111 (2): 716-728
- **A numerical technique for trailing-edge acoustic scattering problems**
Barone, M., Lele, S., K.
2002
- **A numerical study of broad-band shock noise**
Lui, C., Lele, S., K.
2002
- **Numerical simulation of trailing edge receptivity**
Barone, M., Lele, S., K.
2002
- **Spatial scale decomposition of shear layer turbulence and the sound sources associated with the missing scales in a large-eddy simulation**
Bodony, D., J., Lele, S., K.
2002
- **A numerical investigation of broad-band shock noise**
Lui, C., Lele, S., K.
2002
- **Thermal perturbation of trailing vortices** *Euromech Colloquium 396*
Orlandi, P., Carnevale, G. F., Lele, S. K., Shariff, K.
GAUTHIER-VILLARS/EDITIONS ELSEVIER.2001: 511–24
- **Vortex-wake pollution: A problem in fluid mechanics** *Symposium on Fluid Mechanics and the Environment held in Honor of Sidney Leibovich*
Lele, S. K.
SPRINGER-VERLAG BERLIN.2001: 163–181
- **Computational Aeroacoustics 2001 Yearbook of Science and Technology**
Lele, S., K.
Mc Graw Hill.2001: 107–111
- **Numerical study of leading edge heat transfer under free-stream turbulence**
Xiong, Z., Lele, S., K.
2001
- **Direct numerical simulation of spatially developing, compressible, turbulent mixing layers**
Lui, C., Lele, S., K.
2001
- **Computer Simulation and Prediction of Jet Noise** *High Speed Jet Flows*
Lele, S., K., Freund, J., B.
edited by Raman, G., McLaughlin, D., Morris, P.
Taylor & Francis.2001: 1
- **Computational Aeroacoustics for Jet Noise Physics**
Lele, S., K.
2001
- **Prediction of shock-cell structure using parabolized stability equations**
Choi, M., R., Lele, S., K.

2001

- **Computational Aeroacoustics 2001 Yearbook of Science and Technology**

Lele, S., K.

2001: 107-111

- **Large Eddy Simulation of a near sonic turbulent jet and its radiated noise**

Constantinescu, G., S., Lele, S., K.

2001

- **Shock leakage through an unsteady vortex-laden mixing layer: application to jet screech**

Suzuki, T., Lele, S., K.

2001

- **Computational Aeroacoustics for Jet Noise Physics**

Lele, S., K.

edited by Lumley, J., L.

2001

- **Numerical simulation of a Mach 1.92 turbulent jet and its sound field AIAA/CEAS 4th Aeroacoustics Conference**

Freund, J. B., Lele, S. K., Moin, P.

AMER INST AERONAUT ASTRONAUT.2000: 2023-31

- **Compressibility effects in a turbulent annular mixing layer. Part 2. Mixing of a passive scalar JOURNAL OF FLUID MECHANICS**

Freund, J. B., Moin, P., Lele, S. K.

2000; 421: 269-292

- **Compressibility effects in a turbulent annular mixing layer. Part 1. Turbulence and growth rate JOURNAL OF FLUID MECHANICS**

Freund, J. B., Lele, S. K., Moin, P.

2000; 421: 229-267

- **Influence of inflow disturbances on stagnation-region heat transfer JOURNAL OF HEAT TRANSFER-TRANSACTIONS OF THE ASME**

Bae, S., Lele, S. K., Sung, H. J.

2000; 122 (2): 258-265

- **Computational Aeroacoustics: Recent Progress and Current Challenges**

Lele, S., K.

2000

- **Computational Aeroacoustics: Recent Progress and Current Challenges**

Lele, S., K.

2000

- **A Numerical investigation of sound generation in supersonic jet screech**

Manning, T., A., Lele, S., K.

2000

- **Direct numerical simulation of a low Reynolds number Mach 1.92 turbulent jet and its sound field AIAA Journal**

Freund, J., B., Lele, S., K., Moin, P.

2000; 38: 2023-2031

- **Green's functions in a boundary layer: low and high frequency asymptotes**

Suzuki, T., Lele, S., K.

2000

- **Asymptotic growth of disturbances from spatially compact source in a skewed mixing layer PHYSICS OF FLUIDS**

Lu, G. Y., Lele, S. K.

1999; 11 (5): 1153-1160

- **Direct computation of the sound generated by vortex pairing in an axisymmetric jet JOURNAL OF FLUID MECHANICS**

Mitchell, B. E., Lele, S. K., Moin, P.

1999; 383: 113-142

● **Method for accelerating the destruction of aircraft wake vortices** *AIAA 36th Aerospace Sciences Meeting*

Rennich, S. C., Lele, S. K.

AMER INST AERONAUT ASTRONAUT.1999: 398-404

● **Receptivity to surface roughness near a swept leading edge** *JOURNAL OF FLUID MECHANICS*

Collis, S. S., Lele, S. K.

1999; 380: 141-168

● **Inviscid instability of compressible swirling mixing layers** *PHYSICS OF FLUIDS*

Lu, G. Y., Lele, S. K.

1999; 11 (2): 450-461

● **Direct numerical simulations of compressible turbulent flows: Fundamentals and applications** *2nd ERCOFTAC Summer School on Turbulence and Transition Modelling*

Lele, S. K.

SPRINGER.1999: 421-488

● **Acoustic Scattering from a Mixing Layer: Role of Instability Waves**

Suzuki, T., Lele, S. K.

1999

● **A method for accelerating the destruction of aircraft-wake vortices** *Journal of Aircraft*

Rennich, S., C., Lele, S. K.

1999; 36: 398-404

● **Direct Numerical Simulation of Compressible Turbulent Flows: Fundamentals and Applications** *Turbulence and Combustion Modeling*

Lele, S., K.

edited by Alfredsson, H., Johansson, A., Henningson, D.

Kluwer Academic Publishing.1999: 421-488

● **Large-Eddy Simulation of a Mach 0.9 Turbulent Jet**

Boersma, B., J., Lele, S., K.

1999

● **Numerical Simulation of Shock-Vortex Interaction in Supersonic Jet Screech**

Manning, T., Lele, S., K.

1998

● **Mechanism for Accelerating the Destruction of Aircraft Wake Vortices**

Rennich, S., C., Lele, S. K.

1998

● **Shock-vortex interactions in supersonic jet screech: an update**

Manning, T., A., Lele, S., K.

1998

● **Direct computation of Mach wave radiation in an axisymmetric supersonic jet** *AIAA JOURNAL*

Mitchell, B. E., Lele, S. K., Moin, P.

1997; 35 (10): 1574-1580

● **Numerical method for incompressible vortical flows with two unbounded directions** *JOURNAL OF COMPUTATIONAL PHYSICS*

Rennich, S. C., Lele, S. K.

1997; 137 (1): 101-129

● **Interaction of isotropic turbulence with shock waves: Effect of shock strength** *JOURNAL OF FLUID MECHANICS*

Lee, S. S., Lele, S. K., Moin, P.

1997; 340: 225-247

- **The influence of entropy fluctuations on the interaction of turbulence with a shock wave** *JOURNAL OF FLUID MECHANICS*
Mahesh, K., Lele, S. K., Moin, P.
1997; 334: 353-379
- **Sound generation in a mixing layer** *JOURNAL OF FLUID MECHANICS*
Colonius, T., Lele, S. K., Moin, P.
1997; 330: 375-409
- **Flows with density variations and compressibility: Similarities and differences** *IUTAM Symposium on Variable Density Low-Speed Turbulent Flows*
Lele, S. K.
SPRINGER.1997: 279–301
- **Computational Aeroacoustics: A Review** *invited lecture at the 35th Aerospace Sciences Meeting and Exhibit, AIAA Paper 97-0018*
Lele, S., K.
1997
- **Direct Simulation of a Supersonic Round Turbulent Shear Layer**
Freund, J., B., Lele, S., K., Moin, P.
1997
- **Computational Aeroacoustics: A Review**
Lele, S., K.
1997
- **Computation of quadrupole noise using acoustic analogy** *AIAA JOURNAL*
Wang, M., Lele, S. K., Moin, P.
1996; 34 (11): 2247-2254
- **Sound radiation during local laminar breakdown in a low-Mach-number boundary layer** *JOURNAL OF FLUID MECHANICS*
Wang, M., Lele, S. K., Moin, P.
1996; 319: 197-218
- **Calculation of the radiated sound field using an open Kirchhoff surface** *AIAA JOURNAL*
Freund, J. B., Lele, S. K., Moini, P.
1996; 34 (5): 909-916
- **Compressible and Hypersonic Flows** *Research Trends in Fluid Mechanics, Report by US National Committee for Theoretical and Applied Mechanics, published by American Institute of Physics*
Lele, S., K.
1996: 138-147
- **Sound Radiation During Local Laminar Breakdown in a Low Mach Number Boundary Layer** *Journal of Fluid Mechanics*
Wang, M., Lele, S., K., Moin, P.
1996; 319: 197-218
- **A Computational Approach to Swept Leading-Edge Receptivity**
Collis, S., S., Lele, S., K.
1996
- **The Direct Computation of Mach Wave Radiation in an Axisymmetric Supersonic Jet**
Mitchell, B., E., Lele, S., K., Moin, P.
1996
- **Direct Numerical Simulation of the breakdown of Aircraft Wake Vortices**
Rennich, S., C., Lele, S., K.
1996
- **Compressible and Hypersonic Flows** *Research Trends in Fluid Mechanics, Report by US National Committee for Theoretical and Applied Mechanics*
Lele, S., K.
American Institute of Physics.1996: 138–147

- **THE INTERACTION OF AN ISOTROPIC FIELD OF ACOUSTIC-WAVES WITH A SHOCK-WAVE** *JOURNAL OF FLUID MECHANICS*
Mahesh, K., Lee, S. S., Lele, S. K., Moin, P.
1995; 300: 383-407
- **DIRECT COMPUTATION OF THE SOUND FROM A COMPRESSIBLE CO-ROTATING VORTEX PAIR** *JOURNAL OF FLUID MECHANICS*
Mitchell, B. E., Lele, S. K., Moin, P.
1995; 285: 181-202
- **Direct Computation of the Sound Generated by Vortex Pairing in an Axisymmetric Jet**
Mitchell, B., E., Lele, S., K., Moin, P.
1995
- **The Sound Generated by a Two-Dimensional Shear Layer: A Comparison of Direct Computations and Acoustic Analogies**
Colonius, T., Lele, S., K., Moin, P.
1995
- **Calculation of the Radiated Sound Field Using an Open Kirchhoff Surface**
Freund, J., B., Lele, S., K., Moin, P.
1995
- **THE SCATTERING OF SOUND-WAVES BY A VORTEX - NUMERICAL SIMULATIONS AND ANALYTICAL SOLUTIONS** *JOURNAL OF FLUID MECHANICS*
Colonius, T., Lele, S. K., Moin, P.
1994; 260: 271-298
- **ON THE DENSITY RATIO EFFECT ON THE GROWTH-RATE OF A COMPRESSIBLE MIXING LAYER** *Symposium on Turbulence, in honor of the 60th Birthday of William Craig Reynolds*
Lu, G. Y., Lele, S. K.
AMER INST PHYSICS.1994: 1073-75
- **THE RESPONSE OF ANISOTROPIC TURBULENCE TO RAPID HOMOGENEOUS ONE-DIMENSIONAL COMPRESSION** *Symposium on Turbulence, in honor of the 60th Birthday of William Craig Reynolds*
Mahesh, K., Lele, S. K., Moin, P.
AMER INST PHYSICS.1994: 1052-62
- **COMPRESSIBILITY EFFECTS ON TURBULENCE** *ANNUAL REVIEW OF FLUID MECHANICS*
Lele, S. K.
1994; 26: 211-254
- **Interaction of Isotropic Turbulence With a Strong Shock Wave**
Lee, S., Lele, S., K., Moin, P.
1994
- **A Note on the Density Ratio Effect on the Growth Rate of a Compressible Mixing Layer** *The Physics of Fluids A*
Lu, G., Lele, S., K.
1994; 6: 1073-1075
- **Vortex Breakdown in Skewed Compressible Mixing Layers**
Lu, G., Lele, S., K.
1994
- **THE EVOLUTION OF A PLANE MIXING LAYER WITH SPANWISE NONUNIFORM FORCING** *PHYSICS OF FLUIDS*
Collis, S. S., Lele, S. K., Moser, R. D., Rogers, M. M.
1994; 6 (1): 381-396
- **BOUNDARY-CONDITIONS FOR DIRECT COMPUTATION OF AERODYNAMIC SOUND GENERATION** *AIAA JOURNAL*
Colonius, T., Lele, S. K., Moin, P.
1993; 31 (9): 1574-1582
- **DIRECT NUMERICAL-SIMULATION OF ISOTROPIC TURBULENCE INTERACTING WITH A WEAK SHOCK-WAVE** *JOURNAL OF FLUID MECHANICS*

- Lee, S. S., Lele, S. K., Moin, P.
1993; 251: 533-562
- **VORTEX-INDUCED DISTURBANCE FIELD IN A COMPRESSIBLE SHEAR-LAYER** *PHYSICS OF FLUIDS A-FLUID DYNAMICS*
Papamoschou, D., Lele, S. K.
1993; 5 (6): 1412-1419
 - **INVISCID INSTABILITY OF A SKEWED COMPRESSIBLE MIXING LAYER** *JOURNAL OF FLUID MECHANICS*
Lu, G. Y., Lele, S. K.
1993; 249: 441-463
 - **Boundary Conditions for Direct Computation of Aerodynamic Sound Generation** *AIAA Journal*
Colonius, T., Lele, S., K., Moin, P.
1993; 31: 1574-1582
 - **A Comparative Study of Turbulence Decay Using Navier-Stokes and a Discrete Particle Simulation**
Goswami, A., D., Baganoff, D., Lele, S., K., Feiereisen, W.
1993
 - **Shock Turbulence Interaction in the Presence of Mean Shear: An Application of Rapid Distortion Theory**
Mahesh, K., Lele, S., K., Moin, P.
1993
 - **Spatial Growth of Disturbances in a Skewed Compressible Mixing Layer**
Lu, G., Lele, S., K.
1993
 - **Matching of Near/Far-field Equation Sets for Direct Computations of Aerodynamic Sound**
Freund, J., B., Lele, S., K., Moin, P.
1993
 - **Direct Computation of the Sound Generated by a Two-Dimensional Shear Layer**
Colonius, T., Lele, S., K., Moin, P.
1993
 - **SHOCK-JUMP RELATIONS IN A TURBULENT-FLOW** *PHYSICS OF FLUIDS A-FLUID DYNAMICS*
Lele, S. K.
1992; 4 (12): 2900-2905
 - **COMPACT FINITE-DIFFERENCE SCHEMES WITH SPECTRAL-LIKE RESOLUTION** *JOURNAL OF COMPUTATIONAL PHYSICS*
Lele, S. K.
1992; 103 (1): 16-42
 - **VORTICITY FORM OF TURBULENCE TRANSPORT-EQUATIONS** *PHYSICS OF FLUIDS A-FLUID DYNAMICS*
Lele, S. K.
1992; 4 (8): 1767-1772
 - **BOUNDARY-CONDITIONS FOR DIRECT SIMULATIONS OF COMPRESSIBLE VISCOUS FLOWS** *JOURNAL OF COMPUTATIONAL PHYSICS*
Poinsot, T. J., Lele, S. K.
1992; 101 (1): 104-129
 - **SIMULATION OF SPATIALLY EVOLVING TURBULENCE AND THE APPLICABILITY OF TAYLOR HYPOTHESIS IN COMPRESSIBLE FLOW** *PHYSICS OF FLUIDS A-FLUID DYNAMICS*
Lee, S., Lele, S. K., Moin, P.
1992; 4 (7): 1521-1530
 - **Boundary Conditions for Direct Computations of Aerodynamic Sound Generation**
Colonius, T., Lele, S., K., Moin, P.
1992

- **Direct Computation of the Sound From a Compressible Co-rotating Vortex Pair**
Mitchell, B., E., Lele, S., K., Moin, P.
1992
- **THE FREE COMPRESSIBLE VISCOUS VORTEX JOURNAL OF FLUID MECHANICS**
Colonius, T., Lele, S. K., Moin, P.
1991; 230: 45-73
- **EDDY SHOCKLETS IN DECAYING COMPRESSIBLE TURBULENCE PHYSICS OF FLUIDS A-FLUID DYNAMICS**
Lee, S., Lele, S. K., Moin, P.
1991; 3 (4): 657-664
- **Motion of Particles With Inertia in a Compressible Free Shear Layer The Physics of Fluids A**
Samimy, M., Lele, S., K.
1991; 3: 1915-1923
- **Scattering of Sound Waves by a Compressible Vortex**
Colonius, T., Lele, S., K., Moin, P.
1991
- **Particle Laden Compressible Shear Layers**
Samimy, M., Lele, S., K.
1990
- **Nonlinear Dynamics in Langmuir Circulations and in Thermosolutal Convection Journal of Fluid Mechanics**
Leibovich, S., Lele, S., K., Moroz, I., M.
1989; 198: 471-511
- **Direct Numerical Simulation of Compressible Free Shear Flows**
Lele, S., K.
1989
- **A Consistency Condition for Reynolds Stress Closures Physics of Fluids**
Lele, S., K.
1985; 28: 64-68
- **The Influence of the Horizontal Component of the Earth's Angular Velocity on the Instability of the Ekman Layer Journal of Fluid Mechanics**
Leibovich, S., Lele, S., K.
1985; 150: 41-87
- **Direct Simulation of Shock-Turbulence Interaction Journal of Fluid Mechanics, 1993: corrigendum in Journal of Fluid Mechanics**
Lee, S., Lele, S., K., Moin, P.
1993, 1994; 251, 264: 373-374, 533-562
- **Evaluation of far-field sound using open surface corrections to Lighthill's equation**
Cheung, L., C., Lele, S., K.
- **Parameterization of subgrid aircraft emission plumes for use in large-scale atmospheric simulations Atmos. Chem. Phys., also ATMOS. CHEM. PHYS. DISCUSS.**
Naiman, A., D., Lele, S., K., Wilkerson, J., T., Jacobson, M., Z.
2010, 2009; 10, 9: 2551-2560, 24755–24781
- **Direct Simulation of a Mach 1.92 Jet and its Sound Field**
Freund, J., B., Lele, S., K., Moin, P.
- **Direct Simulation and Analysis of Shock-turbulence Interaction**
Lee, S., Lele, S., K., Moin, P.