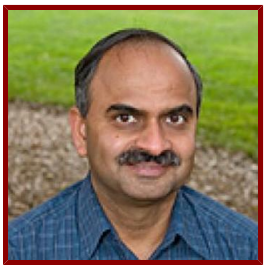
Stanford



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 phemonema, 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

- Fellow American Institute of Aeronautics and Astronautics, American Institute of Aeronautics and Astronautics (2026)
- Fluid Dynamics Prize, American Physical Society (2025)
- 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

2026-27

- Advanced Fluid Mechanics - Flow Instabilities: ME 451B (Aut)
- Partial Differential Equations in Engineering: CME 204, ME 300B (Win)
- Topics in Aeroacoustics: AA 201B (Spr)

2025-26

- Advanced Topics in Turbulence: ME 461 (Aut)
- Fundamentals of Acoustics: AA 201A (Spr)
- Partial Differential Equations in Engineering: CME 204, ME 300B (Win)

2024-25

- Partial Differential Equations in Engineering: CME 204, ME 300B (Win)
- Topics in Aeroacoustics: AA 201B (Spr)

2023-24

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

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Miya Coimbra, Ahmed Elnahhas, Tim Flint, Ali Lasemi, Michael Whitmore, Christopher Williams, Wenyuan Xue

Postdoctoral Faculty Sponsor

Jihoon Kim

Doctoral Dissertation Advisor (AC)

Zoe Barbeau, Anjini Chandra, Steven Dai, Andrew Potts, Youssef Wahba, Jun Yamasaki

Master's Program Advisor

Alejandro Aguirre, Atharv Biju Pillai, Joey Cao, Katherine Cao, Jeffrey Davis, Joon Kyo Kim, Elaine Liu, Gautam Neon, Michael Novak, Anthony Sanguinetti, Nikhil Seshadri, Jasper Wood, Eric Yang

Doctoral Dissertation Co-Advisor (AC)

Alex Storrer

Doctoral (Program)

Lucy Brown, Efe Eroz

Postdoctoral Research Mentor

Blaine Vollmer

Publications

PUBLICATIONS

- **Shear-free, inhomogeneous turbulence in a stably stratified fluid** *JOURNAL OF FLUID MECHANICS*
  Hass, R., Lele, S.
  2026; 1037
- **Effects of lower floating-point precision on scale-resolving numerical simulations of turbulence** *JOURNAL OF COMPUTATIONAL PHYSICS*
  Karp, M., Stanly, R., Mukha, T., Galimberti, L., Song, H., Dalcin, L., Rezaeiravesh, S., Jansson, N., Markidis, S., Parsani, M., Bose, S., Lele, S., Schlatter, et al
  2026; 549
- **Two neural network Unet architecture for subfilter stress modeling** *PHYSICAL REVIEW FLUIDS*
  Wu, A., Lele, S. K.
  2025; 10 (1)
- **Analysis of Guided Jet Modes and Energy Transfer in High Aspect Ratio Rectangular Screeching Jets**
  Martin, O. G., Lele, S. K., Wu, G., AIAA
  AMER INST AERONAUTICS & ASTRONAUTICS.2025
- **Heat transfer effects in dense-gas boundary layer flows**
  Chandra, A., Song, H., Lele, S. K., AIAA
  AMER INST AERONAUTICS & ASTRONAUTICS.2025
- **Exploration of Supersonic Jet Noise Mitigation for a Rectangular Jet using Fluidic Injection**
  Dai, S., Yamasaki, J., Martin, O., Lele, S. K., Gautam, K., Mohammed, A., Cramer, J., Gutmark, E., AIAA
  AMER INST AERONAUTICS & ASTRONAUTICS.2025
- **A robust compact finite difference framework for simulations of compressible turbulent flows** *JOURNAL OF COMPUTATIONAL PHYSICS*
  Song, H., Ghate, A. S., Matsuno, K. V., West, J. R., Subramaniam, A., Lele, S. K.
  2024; 519
- **A high-order, localized-artificial-diffusivity method for Eulerian simulation of multi-material elastic-plastic deformation with strain hardening** *JOURNAL OF COMPUTATIONAL PHYSICS*
  West, J. R., Adler, M. C., Lele, S. K.
  2024; 514
- **A closure mechanism for screech coupling in rectangular twin jets** *JOURNAL OF FLUID MECHANICS*
  Jeun, J., Wu, G., Lele, S. K.
  2024; 987
- **Heat transfer and transport property contrast effects on the compressible Rayleigh-Taylor instability** *PHYSICAL REVIEW FLUIDS*
  Cherng, K., Lele, S., Livescu, D.
  2024; 9 (4)
- **Turbulent mixing in transcritical and supercritical carbon-dioxide free-shear and boundary layer flows**
  Song, H., Chandra, A., Dai, S., Ghate, A. S., Lele, S. K., AIAA
  AMER INST AERONAUTICS & ASTRONAUTICS.2024
- **Computational Aeroacoustic Study of Coannular Nozzles with Internal Mixing Geometries at High Transonic Mach Numbers**

Wu, G., Martin, O. G., Lele, S. K., AIAA
AMER INST AERONAUTICS & ASTRONAUTICS.2024

- **Assessment of High Resolution Numerical Methods for Two Phase Shear Layers**
Barbeau, Z., Lele, S. K., AIAA
AMER INST AERONAUTICS & ASTRONAUTICS.2024
- **Noise Predictions for a Dual-Stream Jet with Forced Internal Mixing**
Martin, O., Wu, G., Lele, S. K., AIAA
AMER INST AERONAUTICS & ASTRONAUTICS.2024
- **Large eddy simulations of unsheared, stably stratified, inhomogeneous turbulence**
Hass, R. D., Lele, S. K., AIAA
AMER INST AERONAUTICS & ASTRONAUTICS.2024
- **Analysis of Feedback Mechanism in Transonic Laminar Shock Buffet on the OALT25 Airfoil**
Yamasaki, J., Lele, S. K., AIAA
AMER INST AERONAUTICS & ASTRONAUTICS.2024
- **Numerical study of transonic laminar shock buffet on the OALT25 airfoil**
Song, H., Wong, M., Ghate, A. S., Lele, S. K., AIAA
AMER INST AERONAUTICS & ASTRONAUTICS.2024
- **Toward a Data-informed Update of Park2 Wind Turbine Wake Model for Predicting Power Efficiency of Wind Farms**
Hadfield, B., Lele, S. K., Karlsson, T., Spencer, J., AIAA
AMER INST AERONAUTICS & ASTRONAUTICS.2024
- **A Subgrid Stress Model with Tensor Basis Convolutional Neural Networks: Analysis and Integration**
Wu, A., Lele, S. K., AIAA
AMER INST AERONAUTICS & ASTRONAUTICS.2024
- **Wavelet-based pressure decomposition for airfoil noise in low-Mach number flows** *PHYSICS OF FLUIDS*
Kang, D., Lee, S., Brouzet, D., Lele, S. K. K.
2023; 35 (7)
- **Assessment of diffuse-interface methods for compressible multiphase fluid flows and elastic-plastic deformation in solids** *JOURNAL OF COMPUTATIONAL PHYSICS*
Jain, S. S., Adler, M. C., West, J. R., Mani, A., Moin, P., Lele, S. K.
2023; 475
- **Unstructured Large-Eddy Simulations of Rectangular Jet Screech: Assessment and Validation** *AIAA JOURNAL*
Jun Wu, G., Lele, S. K., Jeun, J., Gustavsson, J., Sellappan, P., Kumar, R.
2022
- **Scalable parallel linear solver for compact banded systems on heterogeneous architectures** *JOURNAL OF COMPUTATIONAL PHYSICS*
Song, H., Matsuno, K. V., West, J. R., Subramaniam, A., Ghate, A. S., Lele, S. K.
2022; 468
- **Aeroacoustics of Twin Rectangular Jets Including Screech: Large-Eddy Simulations with Experimental Validation** *AIAA JOURNAL*
Jeun, J., Karnam, A., Wu, G., Lele, S. K., Baier, F., Gutmark, E. J.
2022
- **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. A. 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 Rallic, M., Cavalieri, A. V. 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 supertonic 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-Hawkings 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*
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  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.
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- **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.
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- **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.
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- **The source of crackle noise in heated supersonic jets**
  Nichols, J., W., Lele, S., K., Spyropoulos, J., T.
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- **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
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- **Trailing-Edge Noise Predictions Using Compressible Large-Eddy Simulation and Acoustic Analogy** *AIAA JOURNAL*
  Wolf, W. R., Lele, S. K.
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- **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.
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- **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
- **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
- **Quadrupole Noise in Turbulent Wake Interaction Problems**
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  2012
- **Towards Best Practices for Jet Noise Predictions with Unstructured Large Eddy Simulations**
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