Curriculum Vitae

K.R. Sreenivasan

Tel: 212-992-7914 (off), 347-410-4509 (cell, more reliable)
e-mail: krs3@nyu.edu

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Present positions

- University Professor, New York University (NYU)
- Professor, Department of Physics
- Professor, Courant Institute of Mathematical Sciences
- Eugene Kleiner Professor of Innovation, Department of Mechanical and Aerospace Engineering, Tandon School of Engineering
- Affiliated appointments: Department of Chemical and Biological Engineering, Tandon School of Engineering; Department of Biomaterials, NYU College of Dentistry
- Principal Investigator, Center for Astrophysics and Space Science, Research Institute, NYU Campus in Abu Dhabi

Academic Degrees

- 1968, B.E. (Mech. Engg.), Bangalore University (first rank, with Sir M. Visvesvaraya Memorial Prize and Indumati Lalbai Memorial Gold Medal; the Institution of Engineers Prize and its Honorary Graduate Membership awarded for achieving the first place in all branches of engineering for all three universities in the State of Karnataka)
- 1970, M.E. (Aero. Engg.), Indian Institute of Science (J.R.D. Tata Fellowship; first rank)
- 1975, Ph.D. (Aero. Engg.), Indian Institute of Science (P.S. Narayana Medal for the best Ph.D. thesis in Mechanical Sciences)
- 1985, M.A. (Privatim), Yale University
- 2006, D.Sc. (Honoris Causa), Lucknow University, India
- 2007, D.Sc. (Honoris Causa), University of Hyderabad, India
- 2008, D.Sc. (Honoris Causa), Romanian Academy, Bucharest

Employment history

(a) Research appointments

- 1975-77, Post-doctoral Fellow, Universities of Sydney and Newcastle, Australia
- 1977-79, Research Associate and Lecturer, Johns Hopkins University

(b) Professorial and administrative appointments at Yale University (until December 2001)

- 1979-1982, Assistant Professor, Department of Engineering and Applied Science
- 1982-1985, Associate Professor, Department of Mechanical Engineering
- 1985-1988, Professor, Department of Mechanical Engineering
- 1988-2002, Harold W. Cheel Professor of Mechanical Engineering
- 1991-1996, Andrew W. Mellon Professor
- 1989-2002, Professor of Physics
- 1993-2002, Professor of Applied Physics
- 2000-2002, Professor of Mathematics
- 1995-2000, Member, Center for Computational Ecology
- 1987-1992, Chairman, Mechanical Engineering Department
- 1989, Acting Chairman, Council of Engineering (equivalent, in a previous form, to the Faculty of Engineering, consisting of the Departments of Applied Physics, Chemical Engineering, Electrical Engineering, and Mechanical Engineering)

(c) Professorial and administrative appointments at the University of Maryland, College Park (2002-2009)

- Distinguished University Professor, Professor of Physics, and Glenn L. Martin Professor of Engineering (2003-2009)
- Director, Institute for Physical Science and Technology (until July 2003)
- College Park Professor in the Institute for Physical Science and Technology (since 2009)

(d) International Centre of Theoretical Physics, Trieste, Italy (March 2003-March 2010)

- Abdus Salam Research Professor (continuing appointment)
- Director, International Center for Theoretical Physics (ICTP). (The rank within the UNESCO system is that of Assistant Director General.)

(e) Administrative appointments at New York University, New York (November 2009-todate)

- Senior Vice Provost for Science and Technology in the Global Network University, 2009-2014
- Executive Vice Provost for Science and Technology in NYU, 2014-2016
- Provost, NYU-Polytechnic Institute of New York University, 2013-2014
- Acting President, NYU-Polytechnic Institute of New York University, 2013-2014
- President, NYU-Polytechnic Institute of New York University, 2014-2015
- President and Dean, NYU Polytechnic School of Engineering (renamed Tandon School of Engineering in 2015), 2014-2019; Dean Emeritus, since 2019

Visiting Positions

- Summers of 1981, 82, 84, Visiting Scientist, Center for Atmospheric and Oceanic Sciences, Indian Institute of Science
- 1983, Visiting Scientist, DFVLR, Göttingen, Germany
- Spring 1985, Visiting Professor of Aeronautics, California Institute of Technology
- Spring 1988, Visiting Professor of Physics, Rockefeller University
- Fall 1992, Visiting Professor of Fluid Mechanics, Jawaharlal Nehru Center for Advanced Scientific Research, Bangalore
- 1995-96, Member, School of Mathematics, Institute for Advanced Study, Princeton
- Spring 1999 and Fall 2008, Rothschild Distinguished Visiting Professor, Newton Institute, Cambridge University, England
- 2001-, Distinguished Faculty Fellow, Jawaharlal Nehru Center for Advanced Scientific Research
- Summer 2001, Satish Dhawan Distinguished Professor of Aerospace Engineering, Indian Institute of Science
- Summer 2002, Sir C.V. Raman Distinguished Professor, Indian Academy of Sciences
- Since January 2011, Homi J. Bhabha Distinguished Professor, Tata Institute for Fundamental Research, Mumbai
- Hagler Institute for Advanced Study (formerly Texas Institute for Advanced Study), Texas A&M University, Inaugural Fellow, 2012-2017; also Distinguished Lecturer, 2018
- Adjunct Professor, Department of Mechanical Engineering, Georgia Institute of Technology, 2018-
- Visiting Professor, Institute of Advanced Study, Princeton, 2018-19
- Simpson Distinguished Visiting Professor, Department of Mechanical Engineering, Northwestern University, 2019
- Satish Dhawan Professor, Indian Institute of Science, May-June 2024

Research interests, teaching and publications

Primary expertise: Fluid mechanics and turbulence in a range of applications.

Other interests: nonlinear and nonequilibrium phenomena and cryogenic helium.

Taught undergraduate and graduate courses on the above topics at Yale, Trieste, New York University and elsewhere as visiting professor (or lecturer in various summer schools world-wide)

About 350 journal publications and book articles relating to areas of my specialization, and also on sonic booms, nucleation of droplets in condensation, chaos, fractals, cosmology, and so forth.

Honoree

1. A Special Symposium on Interdisciplinary Fluid Science and Turbulence was held for my 60th birthday at Johns Hopkins University in 2008, with the title "At the boundaries of nonlinear physics, fluid mechanics and turbulence: where do we stand?"

Organized by S. Chen, G.L. Eyink, D.P. Lathrop and C. Meneveau.

A few papers presented at the meeting were collected in volume 239 of Physica D, pages 1211-1378 (15 July 2010).

2. "Katepalli Raju Sreenivasan: A Prominent Physical Scientist" (in Kannada), 2008; author K.R. Jaya Sri

3. KRS70: A collection of essays by students, friends and collaborators, 280 pp., Laksmi Mudranalaya, Bangalore, 2017. The book was released in a function dedicated to my 70th birthday organized by the Green Valley Public School in my hometown.

4. KRS70 Symposium held in Denver, Colorado in Nov 2017: A two-day symposium held in my honor at the meeting of the Fluid Dynamics Division of the American Physical Society; See APS News, June 2018 (Volume 27, Number 6), see "The Back Page: A Life in Teaching and Turbulence" for remarks at that meeting:

https://www.aps.org/publications/apsnews/201806/backpage.cfm

5. Five-day discussion meeting at the International Center for Theoretical Sciences, Bangalore, entitled "Turbulence from angstroms to light years" celebrating aspects of my work. As part of it, I delivered three lectures in honor of S. Chandrasekhar, the Indian-American Astrophysicist.

6. A dedicated session on Partial Differential Equations dedicated, Indian Society of Industrial and Applied Mathematics, Feb. 2018.

7. "Interview with K.R. Sreenivasan: Great Souls, Complex Flows, and the Soul of a Flow", Bhavana, July 2018, pp. 11-27.

8. "Topics in Classical and Quantum Science and Engineering", a three-day Scientific Symposium organized by Texas A&M University, May 1-3, 2023, to celebrate my 75th birthday. See

https://tacl.tamu.edu/krs_2023/

A special issue of Physics of Fluids of some 50 research papers has been compiled in commemoration of the event.

Invited and special lectures

Delivered numerous plenary and principal invited lectures in international meetings and workshops on fluid dynamics and related fields such as plasma physics, aeronautics, condensed matter physics, nonlinear dynamics, applied mathematics,

fractals, and complexity. Opening addresses at many conferences at ICTP and elsewhere.

Numerous invited seminars in Universities and in Government and Industrial Research Laboratories all over the world. Among them:

- 1986, Emerging Scholar Lecture, University of Notre Dame
- 1987, The inaugural Stanley Corrsin Memorial Lecture, Johns Hopkins University
- 1988, Phillips Lectures, Haverford College
- 1992, Sabita Choudhury Memorial Lecture, Indian Institute of Science
- 1995, Distinguished Lecturer, University of Illinois, Urbana-Champaign
- 1997, P.-Y. Zhou Memorial Plenary Lecture at the Seventh Asian Congress of Fluid Mechanics, Chennai
- 1998, Sadowsky Lecture in Applied Mechanics, Rensselaer Polytechnic Institute
- 1998, Distinguished Lecturer, University of Maryland, College Park
- 1998, Carl Gunnard Johnson Lecturer, Worcester Polytechnic Institute
- 2001, Distinguished Lecturer in Fluid Mechanics, Pennsylvania State University
- 2001, Shih-i Pai Lecturer, University of Maryland
- 2002, C.H.B. Priestley Lecturer, CSIRO Atmospheric Research, Aspendale
- 2003, The inaugural J.M. Burgers Lecturer, Technological University, Delft
- 2003, Lecture at the hundredth anniversary of Professor Carlo Ferrari, Politecnico di Torino
- 2004, L.S.G. Kovasznay Lecture, University of Houston, Texas
- 2004, The inaugural Satish Dhawan Memorial Plenary Lecture at the Tenth Asian Congress of Fluid Mechanics, Peradeniya, Sri Lanka
- 2004, C.K. Majumdar Lecturer, Indian Association for the Cultivation of Science, Kolkata
- 2005, Plenary Lecturer, Inaugural Meeting of the World Year of Physics, Paris
- 2006, Distinguished Lecturer, Central University of Hyderabad, India
- 2006, The Abdus Salam Memorial Lecturer, Jamia Millia Islamia University, New Delhi, India; the Government College University, Lahore, Pakistan
- 2006, Sir James Lighthill Distinguished Lecturer, Florida State University
- 2007, Stanford S. and Beverly P. Penner Distinguished Lecturer, University of California, San Diego
- 2008, Crocco Lecturer, Princeton University
- 2010, Dusinberre Distinguished Lecturer, Penn State University
- 2010, The Seventh Meghnad Saha Distinguished Lecture, Allahabad University, India
- 2013, Distinguished University Professorship Lecture at NYU
- 2013, Edison Lecture, University of Notre Dame
- 2015, Distinguished University Dean's Lecture, "Abdus Salam as a Physicist and a Humanitarian"
- 2016, Emmy Noether Lectures (2), Institute for Mathematics, Bar Ilan University, Israel

- 2018, S. Chandrasekhar Lectures (3) at the International Center for Theoretical Sciences (TIFR), Bangalore, 2018
- 2020, Discovery Park Distinguished Lecturer, Purdue University
- 2020, Otto Laporte Lecture Fluid Dynamics Prize of the American Physical Society associated with the Fluid Dynamics Prize of the American Physical Society
- 2021, Roger Dashen Lecture, Department of Physics, University of California San Diego
- 2021, Public Lecture organized by the NYUAD Research Institute, Abu Dhabi: "What to expect when the Sun turns violent in 2025"
- 2021, Tenth Vainu Bappu Memorial Lecture, Indian Institute of Astrophysics, Bangalore
- 2021, Plenary Lecture, Association of Asia Pacific Scientific Societies, Plasma Physics Division
- 2021, Indian National Academy of Engineering (Bangalore Branch), Inaugural Roddam Narasimha Lecture
- 2022, Invited Lecture in the Symposium of Applied Aerodynamics and Design of Aerospace Vehicles, DRDL, Department of Defense, India
- 2023, Inaugural CNR Rao Endowment Lectureship Award, Indian Institute of Science, Bangalore
- 2025, Seventh Roddam Narasimha Endowment Lecture, Indian Institute of Science, Bangalore

Awards, Honors, Academies, etc

- 1983, Humboldt Fellow
- 1985, Fellow, American Physical Society
- 1988, Member, Connecticut Academy of Science and Engineering
- 1989, Guggenheim Fellow
- 1991, Society of Scholars, Johns Hopkins University
- 1992, Distinguished Alumnus Award, Aerospace Department, Indian Institute of Science
- 1993, Fellow, American Society of Mechanical Engineers
- 1993, Associate Fellow, American Institute for Aeronautics and Astronautics
- 1995, Otto Laporte Award, American Physical Society
- 1996, Distinguished Scholar Award, American Chapter of the Indian Physics Association
- 1997, Fellow, American Academy of Arts and Sciences
- 1998, Fellow, American Association for the Advancement of Science
- 1998, Third World Academy of Sciences (TWAS, now called the Academy of Sciences for the Developing World), Trieste, Italy
- 1999, Member, United States National Academy of Engineering
- 1999, Member, Connecticut Academy of Arts and Science
- 2000, (deferred for policy reasons), Ulam Scholar, Los Alamos National Laboratory
- 2001, Professor B.D. Tilak Distinguished Fellow, Department of Chemical Technology, Mumbai University
- 2003, The 2002 Medal & Lecture in Engineering Sciences, TWAS

- 2003, Honorary Fellow, Indian Academy of Sciences, Bangalore
- 2003, Distinguished Alumnus Award, Indian Institute of Science, Bangalore
- 2004, Honorary Professor, Tehran University
- 2005, Fellow, Institute of Physics, London
- 2005, Foreign Member, Mongolian National Academy of Sciences
- 2006, Fellow, the World Innovation Foundation, UK
- 2006, International Prize and Gold Medal in memory of Professors Modesto Panetti and Carlo Ferrari, Accademia delle Scienze di Torino, Italy
- 2006, Distinguished Service Award and Inaugural Endowment Lecture at the Centre for Applied Mathematics, Bangalore University, India
- 2007, Recipient of the National Order of Scientific Merit Certificate by the Brazilian Government and the Academy of Sciences
- 2007, Foreign Fellow, African Academy of Sciences
- 2007, UNESCO Medal for Promoting International Scientific Cooperation and World Peace from the World Heritage Centre, Florence, Italy
- 2007, President Dr. Zakir Husain Memorial Award from the Duty Society of AMU and the Indian Society of Applied and Industrial Mathematics
- 2007, Member, United States National Academy of Sciences
- 2007, Foreign Fellow, Indian National Academy of Sciences, New Delhi
- 2007, Honorary Member, Accademia Torre e Tasso, Duino-Aurisina, Trieste, Italy
- 2007, Melvin Jones Fellowship, Lions Club International, for Dedicated Service to Humanity
- 2008, Dwight Nicholson Medal for Human Outreach, American Physical Society
- 2008, Honoree of the Sixtieth Birthday Meeting, Johns Hopkins University, Baltimore
- 2009, Nusselt-Reynolds Prize, Assembly of the World Conference on Experimental and Heat Transfer, Fluid Mechanics and Thermodynamics
- 2009, Award for International Scientific Cooperation, American Association for the Advancement of Science (AAAS), Washington, D.C.
- 2011, Tri-State Multicultural Leadership Award of the National Diversity Council, USA
- 2013, elected as Foreign Member of the Accademia dei Lincei
- 2015, inducted to Tau Beta Pi, the oldest Engineering Honor Society
- 2016, Corporate Social Responsibility Award from City and State, New York
- 2016, voted among the fifteen most influential people in Brooklyn
- 2017, Brooklyn-building award, Brooklyn Chamber of Commerce
- 2018, External scientific member Max Planck Solar System Research Institute, Goettingen, and Scientific Member of the Max-Planck Society
- 2020, Honorary Fellow, Tata Institute of Fundamental Research (about 20 Fellows from around the world, includes Nobel Laureates and Fields Medalists)
- 2020, G.I. Taylor Medal of the Society for Engineering Sciences
- 2020, von Karman Medal of the American Society of Civil Engineers for "lasting scientific contributions to diverse fluid dynamical topics from cryogenics to solar convection, especially the dynamics and mixing of

turbulence in laboratory, computational and terrestrial flows, and vast impact on scholarship, scientific development and education in many countries"

- 2020, Charles Russ Richards Memorial Award of the American Society of Mechanical Engineering Pi Tau Sigma (National Mechanical Engineering Honor Society) presented to "an engineering graduate who has demonstrated outstanding achievement in mechanical engineering twenty years or more following graduation"
- 2020, The Fluid Dynamics Prize of the American Physical Society, "For fundamental contributions to fluid dynamics, especially turbulence from quantum to astrophysical scales"
- 2021, Amity Global Excellence Award, Amity University; also Panelist on the US-India Higher Education post-COVID, 21st INBUSH-ERA World Summit, Dubai
- 2022, Leo P. Kadanoff Prize of the American Physical Society, "for pioneering experimental, theoretical and numerical research on the nonlinear and multifractal foundations of turbulent flows"
- 2022, ASME Gold Medal (the highest honor of the American Society of Mechanical Engineering)
- 2023, J.C. Bose Lectureship, Indian National Science Academy, New Delhi
- 2024, (inaugural) Satish Dhawan Distinguished Visiting Professor, Indian Institute of Science
- 2024, Recipient, Humboldt Foundation Senior Scientist Award
- 2024, Fellow Sigma Xi
- 2025, elected member of Academia Europaea
- 2026, (inaugural) Roddam Narasimha Visiting Professor, Indian Institute of Technology, Madras

Editorial: Journals and Series

- Associate Editor, *ASME Journal of Applied Mechanics,* 1984-1990
- Editorial Board Member, *Proceedings of the Indian Academy of Science, series C (Sadhana),* 1988-1991
- Editorial Board Member, *American Scientist,* 1990
- Member, Advisory Board, *Springer Book Series on Interdisciplinary Applied Mathematics,* 1990-2000
- Editorial Board Member, *Journal of Nonlinear Science,* 1991-2002
- Divisional Associate Editor, *Physical Review Letters,* 1991-1995
- Editor*, Journal of Theoretical and Computational Fluid Dynamics,* 1992-1995
- Associate Editor, *Physical Review E,* 1994-1997
- Associate Editor, *Physics of Fluids,* 1995-2000
- Editorial Board Member, *Physical Review E,* 1997-2001
- Editorial Board Member, *Springer Book Series on Applied Mathematics,* since 2000; Editor-in-Chief, from January 2011
- Editorial Board Member, *North-Holland Book Series on Applied Mathematics and Mechanics,* since 2000
- Associate Editor, *Journal of Fluid Mechanics,* 2000-2006
- Associate Editor, *Journal of Applied Fluid Mechanics,* since 2004

- Member, Editorial Advisory Board, *Journal of Turbulence,* since 2004
- Associate Editor, *African Physics Review,* since 2006
- Editorial Board Member, *Proceedings of the National Academy of Sciences, USA,* from January 2009 to January 2011.
- Editor-in-Chief, Journal of Nonlinear Science, Springer, from January 2011
- Advisory Board, *Flow* (CUP journal on fluid dynamics applications)

Edited Books/authored (some are included in list of publications)

- Experimental Heat Transfer, Fluid Mechanics and Thermodynamics, volumes 1 and 2, Elsevier, 1993 (Proceedings of the Third World-Conference), edited with R.K. Shah and Y. Joshi
- Developments in Fluid Dynamics and Aerospace Engineering, Interline, 1995 (conference proceedings in honor of Professor R. Narasimha), edited with S.M. Deshpande, A. Prabhu and P.R. Viswanath
- Two issues of Pramana: Journal of Physics, on Nonlinearity and Chaos in the Physical Sciences, Indian Academy of Science, 1997, edited with R. Ramaswamy
- Flow at Ultra-High Reynolds and Rayleigh Numbers: A Status Report, Springer, 1998, edited with R.J. Donnelly
- Perspectives and Problems in Nonlinear Physics, Springer, 2003, edited with E. Kaplan and J.E. Marsden (in honor of L. Sirovich)
- Two issues of Flow, Turbulence and Combustion: Special Issues in Honor of Professor R.A. Antonia, pp. 91-492, 2004 (edited with R.W. Bilger)
- Compiler and editor of 100 Reasons to be a Scientist, published by the Abdus Salam International Centre for Theoretical Physics, 2004 (translated into Chinese, Marati, Portuguese, Italian, Bengali, etc.)
- One Hundred Years of Boundary Layer Research, Solid Mechanics and its Applications, Springer, 2006 (edited with G.E.A. Meier and H.-J. Heinemann)
- ICTP and Africa, collected and edited, Abdus Salam International Centre for Theoretical Physics, 2007
- The ICTP Experience: Diploma and Step Students, collected and edited, Abdus Salam International Centre for Theoretical Physics, 2007
- The ICTP Experience: The TRIL Programme, collected and edited, Abdus Salam International Centre for Theoretical Physics, 2007
- Collective Phenomena in Macroscopic Systems, Proceedings of the Conference Villa Olmo, Como, Italy 4 -6 December, 2006, World Scientific, 2007 (edited with G. Bertin, R. Pozzoli & M. Romé)
- ICTP and Latin America, collected and edited, Abdus Salam International Centre for Theoretical Physics, 2007
- Frontiers of Fundamental and Computational Physics, Proceedings of the 9th International Symposium, held in Udine and Trieste, 7-9 Jan. 2008. (AIP conference proceedings, 1018). American Institute of Physics, 2008 (edited with B.G. Sidharth, F. Honsell, O. Mansutti and A. de Angelis)
- Special Issue on "Turbulence Mixing and Beyond", *Philosophical Transactions of the Royal Society A,* **368**, pp. 1537-1828 (edited with Snezhana Abarzhi)
- A Voyage Through Turbulence, Cambridge University Press, 434 pages, 2011 (edited with P.A. Davidson, Y. Kaneda and Keith Moffatt)

- Special Issue on "Small Scale Turbulence", volume 241 of Physica D, pp. 135-314, 2012 (edited with Daniela Tordella)
- Ten Chapters in Turbulence, Cambridge University Press (edited with P.A. Davidson and Y. Kaneda), 2013
- Advances in Computation, Modeling and Control of Transitional and Turbulent Flows, World Scientific (edited with T.K. Sengupta, S.K. Lele and P.A. Davidson), 2015
- Quantum Turbulence, Cambridge University Press, 2024 (authored with Carlo F. Barenghi and Ladislav Skrbek)

Students and post-docs

- Supervised 38 Ph.D. students (in addition to five others have worked closely with me); presently 2
- 25 post-docs (an additional 5 at the Center for Astrophysics and Space Science at NYU Abu Dhabi)

Miscellaneous

- Mentioned in a number of directories such as "American Men and Women of Science", "Who is Who in the East," "Who is Who in the World", "Who is Who in America"
- Honorary Member, Lions Club di Trieste Host;
- Prefaces to books authored by others, several;
- News items or articles about me in Phys. Today, 56, no.2, February, 27-28, 2003; Phys. World, 18, no.10, October, 38-41, 2005; Nature 438, 1046-1047, 2005; Nature Materials 5, 843-845, 2006; many newspaper accounts in New Haven, in Trieste and Italy at large, neighboring countries to Italy, UNESCO and IAEA, various places in India; the Crain's New York Business; Brooklyn newspapers, etc.

Examples of service activities at Yale University

- Yale College Faculty Review Committee, 1993
- Member, Advisory and Tenured Appointments Committee for Physical Sciences and Engineering, 1993 and 1996-2000
- Faculty Development Committee, co-chair, 1993, member, 1994-1996
- Factfinder, Yale College Executive Committee, 1994-95
- Silliman Lecture Committee, 1994-1998 (chairman 1997, 98) Applied Mathematics Committee, 1993-1996 (chairman 1996)
- Member, Executive Committee, Cowles Foundation for Economics Research, 1998
- Geophysics Search Committee, Department of Geology and Geophysics, 1998
- Chairman, Committee to recruit Assistant Dean for Yale College and Director of Asian American Cultural Center, 1999
- Member, Search Committee for Dean of Engineering, 1999
- Member, Yale Health Plan Advisory Committee, 2000

Examples of service activities at the University of Maryland

- Chairman, Search Committee, Director of Cooperative Institute for Earth Systems and Climate Studies, 2002
- Member, Selection Committee for the Kim Endowed Professor, 2003
- Member, Selection Committee for Outstanding Research Award, 2003
- Member, Advisory Committee for the Applied Mathematics and Scientific Computation Program Committee, 2003
- Member for the Physical Science Complex, 2003
- Member, Burgers Board, 2003-2009

Examples of service activities elsewhere (omitted are numerous service activities at NYU)

- Representative, Division of Fluid Dynamics (DFD) of the American Physical Society (APS), for the Committee on the International Freedom of Scientists, 1981-1987
- Member, Executive Committee of DFD, 1986-1991 (Chairman 1990; Ex-Officio Member until 1997)
- Member, Fluid Dynamics Prize Committee, APS, 1991
- Member, Nominating Committee, Connecticut Academy of Science and Engineering, 1997-2000
- Frenkiel Award Committee for DFD, Member 1989, Chairman 1999
- Member, Publications Committee, DFD, 1992-1994
- Member, NRC Committee on Nonlinear Science, 1993
- Member, External Advisory Committee for the Department of Mechanical Engineering, Johns Hopkins University, since 1994, Chairman 2000-2003
- Member, Committee of Visitors, National Science Foundation (Fluid Dynamics and Hydraulics), 1995
- Member, Otto Laporte Award Committee, APS, 1996
- Member, NRC Committee on Condensed Matter and Materials Physics, Board on Physics and Astronomy, 1997-1999
- Founder-Chair, Topical Group in Statistical and Nonlinear Physics, APS, 1996 and 1997
- Onsager Prize Committee, APS, Member 1997-2000 (Chair 1997)
- Member, Fluids Engineering Division of the American Society of Mechanical Engineers (ASME), 1988-1991
- Member, New Haven Chapter of ASME, 1998-2000
- Member, Publications Oversight Committee, American Physical Society, 1999-2002
- Member (2001-2003), Vice-Chair (2002) and Chair (2003) of the Mechanical Engineering Peer Committee, U.S. National Academy of Engineering
- Member, Committee of Human Rights, U.S. National Academy of Sciences, since 2001
- Member, Biomass Task Force, Connecticut Academy of Science and Engineering, 2001
- Member, Search Committee for Editor of Physical Review E, 2002

- Secretary (2003), Vice-Chair (2004) and Chair (2005), Section 10 of the U.S. National Academy of Engineering
- Member, Committee on Membership, U.S. National Academy of Engineering, 2003-2006
- Member, Governing Council, TWAS, the Academy of Sciences for the Developing World, since 2003
- Chairman, Engineering Sciences Prize Committee, TWAS, 2003-2006
- Member, Scientific Advisory Council, National Centre for Physics, Islamabad, since 2004
- Co-chairman, World Conference on Sustainable Development, Durban, South Africa, 2005
- Patron, Indian Society for Industrial and Applied Mathematics, since 2006
- Member, IUTAM Symposia Panel for Fluid Mechanics, since 2006
- Member, Scientific Advisory Council, National Mathematics Institute, Abuja, Nigeria, since 2006
- Chairman, the G8-UNESCO World Forum on Education, Research and Innovation: New Partnership on Sustainable Development, Trieste, Italy, 2007
- Associate Member, C13 commission on "Physics for development", IUPAP, since 2007
- Member, International Advisory Council, International Centre for Theoretical Sciences, Mumbai, 2009-
- Member-at-Large, NAS Class III Membership Committee, 2009-2011
- Member, Membership Committee, American Academy of Arts and Sciences, 2013-2016
- Member, International Membership Nominating Group, National Academy of Sciences, 2013-
- Member, National Academies Board on Mathematical Sciences and Their Applications, 2012-2015
- Chairman, Section 31, US National Academy of Sciences, 2020-2023; Chairman Class III, 2023-
- Member, Space Technology Industry-Government-University Roundtable, US National Academy of Sciences, Engineering and Medicine, 2020-
- Member, Committee on the International Freedom of Scientists, American Physical Society, 2020-; Chairman 2021-2022.
- Member, von Karman Prize Selection Committee, American Society of Civil Engineering
- Member, Fluid Dynamics Prize Selection Committee, American Physical Society
- Member, Leo P. Kadanoff Prize Selection Committee, American Physical Society
- Director, IISc Foundation (an organization that raises money in the US for the Indian Institute of Science)
- Chairman, Class III, US National Academy of Sciences, 2023-2025
- Board Member, American Friends of the Alexander von Humboldt Foundation, 2024-

Publications of Katepalli R. Sreenivasan

A. PAPERS

2026

Superstatistics approach to turbulent circulation fluctuations by H.S. Lima, R.M. Pereira, L. Moriconi, K.R. Sreenivasan, and C. Tsallis (to appear)

The asymptotic state of decaying turbulence, Akash Rodhiya and Katepalli R. Sreenivasan, Phil. Trans. Roy. Soc. Lond (to appear)

Influence of plume activity on thermal convection in a rectangular cell, A. Pandey, Ambrish Pandey, Jörg Schumacher, Matteo Parsani and Katepalli R. Sreenivasan, J. Fluid Mech. 1034, A41, 2026

Perspective on some topics in fluid mechanics, J.H. Arakeri, K.R. Sreenivasan, G.S. Bhat, Sadhana 51, 52, 2026

Lawrence Sirovich (obituary): P.K. Newton, K.R. Sreenivasan, A. Bloch, A. Goriely, J. Nonlinear Sci. 36, 14, 2026

2025

V.I. Vasanta Ram, obituary: J Hussong, R Orlu, KR Sreenivasan, Curr. Sci. 129, 831, 2025

Small-scale properties from exascale computations of turbulence on a periodic cube, PK Yeung, Kiran Ravikumar, Rohini Uma-Vaideswaran, Daniel L Dotson, Katepalli R Sreenivasan, Stephen B Pope, Charles Meneveau, Stephen Nichols, J. Fluid Mech. 1019, R2, 2025

Turbulence without walls: Whither the zeroth law of turbulence? Kartik P. Iyer, Theodore D. Drivas, Gregory L. Eyink, and Katepalli R. Sreenivasan, Phys. Rev. Lett. 135, 134001, 2025

Hierarchical network of thermal plumes and their dynamics in turbulent Rayleigh–Bénard convection, PP Shevkar, RJ Samuel, G Zinchenko, M Bode, J Schumacher, Proceedings of the National Academy of Sciences 122 (32), e2502972122

A brief perspective on fluid mechanics research, KR Sreenivasan, Physics of Fluids 37 (8), 2025

Towards simulating fluid flows with quantum computing, SS Bharadwaj, KR Sreenivasan, Sādhanā, 50, 1-19, 2025

Transient and steady convection in two dimensions, A. Pandey and K.R. Sreenivasan, J. Fluid Mech. 1015, A42, 2025

History of Indic sciences and philosophy as viewed by Professor Narasimha, Sourabh S Diwan, K. R. Sreenivasan, Sādhanā 50, 28, 2025

Compact quantum algorithms for time-dependent differential equations, SS Bharadwaj, KR Sreenivasan, Physical Review Research 7, 023262, 2025

Roddam Narasimha. 20 July 1933–14 December 2020: 20 July 1933–14 December 2020, Biographical Memoirs of Fellows of the Royal Society, 20240025, 2025

Bounded dissipation law and profiles of turbulent velocity moments in wall flows, X Chen, KR Sreenivasan, Proceedings of the National Academy of Sciences 122, e2502265122, 2025

Radial Flow Component of Sun's High-frequency Retrograde Inertial Waves, CS Hanson, V Menon, S Hanasoge, KR Sreenivasan, The Astrophysical Journal 984, 48, 2025

What is the turbulence problem, and when may we regard it as solved? KR Sreenivasan, J Schumacher, Annual Review of Condensed Matter Physics 16, 121-143, 2025

Bangalore work on relaminarization, KR Sreenivasan, Sādhanā 50, 20, 2025

2024

Turbulent convection in rotating slender cells, A Pandey, KR Sreenivasan, J. Fluid Mech. 999, A28 (2024)

Solar convective velocities: Updated helioseismic constraints, AC Birch, B Proxauf, TL Duvall, L Gizon, S Hanasoge, BW Hindman, K.R. Sreenivasan, Physics of Fluids 36, 117136, 2024

No sustained mean velocity in the boundary region of plane thermal convection, RJ Samuel, M Bode, JD Scheel, KR Sreenivasan, J Schumacher, Journal of Fluid Mechanics 996, A49, 2024

Bistability in the sunspot cycle, S Vashistha, KR Sreenivasan, Europhys. Lett. 148, 23001, 2024

Two quantum algorithms for solving the one-dimensional advection–diffusion equation, J Ingelmann, SS Bharadwaj, P Pfeffer, KR Sreenivasan, J Schumacher, Computers & Fluids 281, 106369, 2024

Remembering JC Bose on his 165th birthday, KR Sreenivasan, Current Science 127, 00113891, 2024

Saturation of exponents and the asymptotic fourth state of turbulence, KR Sreenivasan, V Yakhot, I Staroselsky, H Chen, Physical Review Research 6, 033087, 2024

Supergranular-scale solar convection not explained by mixing-length theory, CS Hanson, S Bharati Das, P Mani, S Hanasoge, KR Sreenivasan, Nature Astronomy, 1-14, 2024

Sustainability as a core principle of space and planetary exploration, D Atri, P Umansky, KR Sreenivasan, Space Policy, 101636, 2024

A linear model for inertial modes in a differentially rotating Sun, J Bhattacharya, CS Hanson, SM Hanasoge, KR Sreenivasan, The Astrophysical Journal 965, 55, 2024

Phenomenology of transition to quantum turbulence in flows of superfluid helium, L Skrbek, D Schmoranzer, KR Sreenivasan, Proceedings of the National Academy of Sciences 121, e2302256121, 2024

Average turbulence dynamics from a one-parameter kinetic theory: Estimation of the relaxation time, H Chen, I Staroselsky, KR Sreenivasan, V Yakhot, Physics of Fluids 36, 2024

Ensemble fluid simulations on quantum computers, S Succi, W Itani, C Sanavio, KR Sreenivasan, R Steijl, Computers & Fluids 270, 106148, 2024

Quantum algorithm for lattice Boltzmann (QALB) simulation of incompressible fluids with a nonlinear collision term, W Itani, KR Sreenivasan, S Succi, Physics of Fluids 36 (1), 017112, 2024

2023

Hybrid quantum algorithms for flow problems, SS Bharadwaj, KR Sreenivasan, Proceedings of the National Academy of Sciences 120, e2311014120

Reynolds number asymptotics of wall-turbulence fluctuations, X Chen, KR Sreenivasan, Journal of Fluid Mechanics 976, A21

Quantum turbulence, CF Barenghi, L Skrbek, KR Sreenivasan, Cambridge University Press (monograph)

Quantum computing for fluids: Where do we stand?, S Succi, W Itani, K Sreenivasan, R Steijl, Europhysics Letters 144 (1), 10001

Saturation and Multifractality of Lagrangian and Eulerian Scaling Exponents in Three-Dimensional Turbulence, D Buaria, KR Sreenivasan, Physical Review Letters 131 (20), 204001

Comment on "Effect of viscous-convective subrange on passive scalar statistics at high Reynolds number", D Buaria, KR Sreenivasan, Physical Review Fluids 8 (9), 097601

Forecasting small-scale dynamics of fluid turbulence using deep neural networks, Dhawal Buaria and Katepalli R. Sreenivasan, PNAS, 120 (30) e2305765120, 2023

Average Turbulence Dynamics from a One-Parameter Kinetic Theory, H Chen, I Staroselsky, KR Sreenivasan, V Yakhot, Atmosphere 14 (7), 1109

Turbulent convection at very high Rayleigh numbers and the weakly nonlinear theory, KR Sreenivasan, JJ Niemela, Atmosphere 14 (5), 826, 2023

Emergence of universal scaling in isotropic turbulence, S Khurshid, DA Donzis, KR Sreenivasan, Physical Review E 107 (4), 045102, 2023

Lagrangian acceleration and its Eulerian decompositions in fully developed turbulence, D Buaria, KR Sreenivasan, Physical Review Fluids 8 (3), L032601, 2023

2022

Benoit Mandelbrot, in Encyclopedia of Mathematical Geological Sciences, eds. B.S. Daya Sagar, Q. Cheng, J. McKinley and F. Agterberg, Springer-Nature, 2022

Auroras on Mars: from discovery to new developments, D Atri, DB Dhuri, M Simoni, KR Sreenivasan, The European Physical Journal D 76 (12), 1-13, 2022

Self-similar Rayleigh–Taylor mixing with accelerations varying in time and space, SI Abarzhi, KR Sreenivasan, Proceedings of the National Academy of Sciences 119 (47), e2118589119, 2022

Asymmetry of velocity increments in turbulence, KR Sreenivasan, KP Iyer, A Vinodh, Physical Review Research 4 (4), L042002, 2022

Convective mesoscale turbulence at very low Prandtl numbers, A Pandey, D Krasnov, KR Sreenivasan, J Schumacher, Journal of Fluid Mechanics 948, A233, 2022

Similarities between characteristics of convective turbulence in confined and extended domains, A Pandey, D Krasnov, J Schumacher, R Samtaney, KR Sreenivasan, Physica D: Nonlinear Phenomena, 133537, 2022

William Frank Vinen, C Barenghi, P McClintock, L Skrbek, K Sreenivasan, Physics Today 75 (8), 60-60, 2022

Intermittency of turbulent velocity and scalar fields using three-dimensional local averaging, D Buaria, KR Sreenivasan, Physical Review Fluids 7 (7), L072601, 2022

Scaling of acceleration statistics in high Reynolds number turbulence, D Buaria, KR Sreenivasan, Physical Review Letters 128 (23), 234502, 2022

Simulating Solar Near-surface Rossby Waves by Inverse Cascade from Supergranule Energy M Dikpati, PA Gilman, GA Guerrero, AG Kosovichev, SW McIntosh, K.R. Sreenivasan, The Astrophysical Journal 931 (2), 117, 2022

Discovery of high-frequency retrograde vorticity waves in the Sun, CS Hanson, S Hanasoge, KR Sreenivasan, Nature Astronomy 6 (6), 708-714, 2022

Russell Donnelly and His Leaks, JJ Niemela, KR Sreenivasan, Annual Review of Condensed Matter Physics 13, 33-47, 2022

Laws of turbulence decay from direct numerical simulations, J Panickacheril John, DA Donzis, KR Sreenivasan, Philosophical Transactions of the Royal Society A 380 (2218), 20210089, 2022

Law of bounded dissipation and its consequences in turbulent wall flows, X Chen, KR Sreenivasan, Journal of Fluid Mechanics 933, A20, 2022

KK Phua and ICTP, KR Sreenivasan, Looking Beyond The Frontiers Of Science: Dedicated To The 80th Birthday of K.K. Phua, 2022

Nonlinear amplification in hydrodynamic turbulence, KP Iyer, KR Sreenivasan, PK Yeung, Journal of Fluid Mechanics 930, R2, 2022

2021

Origin of Rossby waves observed near the solar surface, P Gilman, M Dikpati, G Guerrero, A Kosovichev, S McIntosh, K.R. Sreenivasan, and others, AGU Fall Meeting Abstracts 2021, SH53C-04, 2021

Commentary: The publication pandemic, P Newton, K Sreenivasan, Phys. Today (e-version only), 2021

Dynamics of three-dimensional turbulence from Navier-Stokes equations, K.R. Sreenivasan and V. Yakhot, Phys. Rev. Fluids 6, 114603 (2021)

Non-Boussinesq convection at low Prandtl numbers relevant to the Sun, A Pandey, J Schumacher, KR Sreenivasan, Physical Review Fluids 6 (10), 100503

The area rule for circulation in three-dimensional turbulence, KP Iyer, SS Bharadwaj, KR Sreenivasan, Proceedings of the National Academy of Sciences 118 (43)

Roddam Narasimha—The Shining Star, KR Sreenivasan, Resonance 26 (10), 1361-1378 (2021)

A tenuous, collisional atmosphere on Callisto, SRC Mogan et al., Icarus 368, 114597 (2021)

Convective heat transport in slender and wider cells is close at high Rayleigh and Prandtl numbers, A Pandey, KR Sreenivasan, Europhys. Lett., 135 (2), 24001 (2021)

Oscillations Modulating Power Law Exponents in Isotropic Turbulence: Comparison of Experiments with Simulations, KP Iyer, GP Bewley, L Biferale, KR Sreenivasan, PK Yeung, Physical Review Letters 126, 254501 (2021)

Analyzing supergranular power spectra using helioseismic normal-mode coupling CS Hanson, S Hanasoge, KR Sreenivasan, Astrophys. J. 910, 156 (2021)

Turbulence is an ineffective mixer when Schmidt numbers are large, D Buaria, MP Clay, KR Sreenivasan, PK Yeung, Phys. Rev. Lett. 126, 074501 (2021)

Non-Boussinesq low-Prandtl number convection with a temperature-dependent thermal diffusivity, Ambrish Pandey, J\"org Schumacher and Katepalli R. Sreenivasan, Astrophys. J. 907, 56 (13 pages) (2021)

Small-scale isotropy and ramp-cliff structures in scalar turbulence, D. Buaria, M.P. Clay, K.R. Sreenivasan and P.K. Yeung, Phys. Rev. Lett. 126, 034504 (2021)

Reynolds number scaling of the peak turbulence intensity near the wall, Xi Chen and K.R. Sreenivasan, J. Fluid Mech. 908 (2021)

Slow spectral transfer and energy cascades in isotropic turbulence, Sualeh Khurshid, Diego A. Donzis and Katepalli R. Sreenivasan J. Fluid Mech. 908 (2021)

Phenomenology of quantum turbulence in superfluid helium, L. Skrbek, D. Schmoranzer, S. Midlink and K.R. Sreenivasan, Proc. Nat. Acad. Sci. 118 (16)

Analyzing supergranular power spectra using helioseismic normal-mode coupling, CS Hanson, S Hanasoge, KR Sreenivasan, The Astrophysical Journal 910, 156

Roddam Narasimha (a scientific obituary), K.R. Sreenivasan, Physics Today 74, 60 (2021)

Does Dissipative Anomaly hold for Compressible Turbulence? John P. John, Diego A. Donzis, and Katepalli R. Sreenivasan, J. Fluid Mech. 920, A20 (2021)

2020

Reply to He et al: The dependence of heat transport law on aspect ratio is still unclear. Proc. Nat. Acad. Sci. 117, 30024 (2020)

Roddam Narasimha (1933-2020): a scientific obituary, K.R. Sreenivasan and G.S. Bhat, CURRENT SCIENCE 119, 2027-2028 (2020)

Dissipation range of the energy spectrum in high Reynolds number turbulence, Dhawal Buaria and Katepalli R. Sreenivasan, Phys. Rev. Fluids 5, 092601(R), 2020

Solar east-west flow correlations that persist for months at low latitudes are dominated by active region inflows, Chris Hanson, Aaron Birch, Laurent Gizon and Katepalli R. Sreenivasan, Astronomy & Astrophysics, 644, A103 (2020).

Benoit Mandelbrot's contributions to turbulence, K.R. Sreenivasan, in Earth Sciences Series: Encyclopedia of Mathematical Geosciences, edited by B. S. Daya Sagar, Qiuming Cheng, Jennifer McKinley and Frits Agterberg (in print)

Quantum computation of fluid dynamics, S. Bharadwaj and K.R. Sreenivasan, Indian Academy of Science Conference Proceedings 3, 1. (arXiv:2007.09147)

Detecting exomoons with a regularized convolutional neural network, R. Alshehhi, K. Rodenbeck, L. Gizon, K.R. Sreenivasan, Astron. Astrophys. Astron. Astrophys. 640, A41 (2020)

The influence of collisions and thermal escape in Callisto's atmosphere, S.R. Carberry Mogan, O.J. Tucker, R.E. Johnson, K.R. Sreenivasan and S. Kumar, Icarus 352, 113932 (2020)

Unusual dynamics of convection in the Sun, J. Schumacher, K.R. Sreenivasan, Rev. Mod. Phys., 94, 941001 (2020)

Large-scale turbulence in the Sun is suppressed and confined to equatorial regions, Shravan M. Hanasoge, Hideyuki Hotta and Katepalli R. Sreenivasan, Sci. Adv., 6, eaba9639 (2020)

Satish Dhawan: Amateur impressions of an illustrious leader, K.R. Sreenivasan, Bhavana, 29-36 (2020)

A general formulation for computing spherical helioseismic sensitivity kernels while incorporating systematical effects, J. Bhattacharya, S.M. Hanasoge and K.R. Sreenivasan, Astrophys. J. 895, 117 (2020).

Compressibility effects on the scalar dissipation rate, John P. John, D.A. Donzis and K.R. Sreenivasan, Combustion Science and Technology, 192, 1-14 (2020).

Scaling exponents saturate in three-dimensional isotropic turbulence, Kartik P. Iyer, Katepalli R. Sreenivasan, and P. K. Yeung, Phys. Rev. Fluids 5, 054605 (2020)

Evgeny Evgrafovich Meshkov (a scientific obituary), S.A. Abarzhi and K.R. Sreenivasan, Phys. Today 73, 64

Classical 1/3 scaling of convection holds up to Ra = 10^{15}, K.P. Iyer, J.D. Scheel, J. Schumacher and K.R. Sreenivasan, Proc. Nat. Acad. Sci. 117, 7594-7598

Fractal iso-level sets in high-Reynolds-number scalar turbulence, K.P. Iyer, J. Schumacher, K.R. Sreenivasan and P.K. Yeung, Phys. Rev Fluids 5, 044501 (2020)

A perspective on machine learning in turbulent flows, S. Pandey, J. Schumacher and K.R. Sreenivasan, J. Turb. 21, 567-584 (2020)
DOI: 10.1080/14685248.2020.1757685

Sergei Ivanovich Anisimov (a scientific obituary), Phys. Today Nov. 2020, DOI:10.1063/PT.6.4o.20201120a

2019

George Veronis (a scientific obituary), K.R. Sreenivasan, J. Wettlaufer, Physics Today 72 (12), 67-67

Solenoidal scaling laws for compressible mixing, John P. John, Diego A. Donzis, K.R. Sreenivasan, Phys. Rev. Lett. 123, 224501, 2019

Circulation in high Reynolds number isotropic turbulence is a bifractal, K.P. Iyer, K.R. Sreenivasan, P.K. Yeung, Phys. Rev. X 9, 041006, 2019

P. N. Shankar (1944–2019), Sinha U. N., Bhogle S., Deshpande M. D.. Kidambi R., Kumar, M., Sreenivasan, K.R., Current Science 116, 1760-1762.

Deep learning in turbulent convection networks, Enrico Fonda, Ambrish Pandey, J\"org Schumacher, Katepalli R. Sreenivasan, Proc. Nat. Acad. Sci. 116 (18), 8667-8672

Turbulent convection and large scale circulation in a cube with rough horizontal surfaces, N Foroozani, JJ Niemela, V Armenio, KR Sreenivasan, Physical Review E 99 (3), 033116

Latitudinal differential rotation in the solar analogues Cygni A and B, M Bazot, O Benomar, J Christensen-Dalsgaard, L Gizon, S Hanasoge, … Astronomy & Astrophysics 623, A125

Scaling of locally averaged energy dissipation and enstrophy density in isotropic turbulence, K.P. Iyer, J Schumacher, K.R. Sreenivasan, PK Yeung, New Journal of Physics 21, 033016

Cancellation exponents in isotropic turbulence and magnetohydrodynamic turbulence, XM Zhai, KR Sreenivasan, PK Yeung, Physical Review E 99 (2), 023102

Reconnection scaling in quantum fluids, E Fonda, KR Sreenivasan, DP Lathrop, Proceedings of the National Academy of Sciences 116 (6), 1924-1928

A stroboscopic view of Professor ECG Sudarshan, KR Sreenivasan, Current Science 116 (2), 216-226

S. Chandrasekhar's Fluid Dynamics, KR Sreenivasan, Annual Review of Fluid Mechanics 51, 1-24

2018

Steep cliffs and saturated exponents in three-dimensional scalar turbulence. P.K. Iyer, J. Schumacher, K.R. Sreenivasan and P.K. Yeung, Phys. Rev. Lett. 121, 264501

Butterfly diagram of a Sun-like star observed using asteroseismology, M Bazot et al. Astronomy and Astrophysics 619, L9

Transition to turbulence scaling in Rayleigh-Bénard convection, J Schumacher, A Pandey, V Yakhot, KR Sreenivasan, Physical Review E 98 (3), 033120

Asteroseismic detection of latitudinal differential rotation in 13 Sun-like stars O Benomar et al., Science 361 (6408), 1231-1234

Turbulent mixing: A perspective, KR Sreenivasan, Proceedings of the National Academy of Sciences, 116, 201800463

Energy spectrum in the dissipation range, S Khurshid, DA Donzis, KR Sreenivasan, Physical Review Fluids 3 (8), 082601

Effects of finite spatial and temporal resolution in direct numerical simulations of incompressible isotropic turbulence, P.K. Yeung, K.R. Sreenivasan and S.B. Pope, Physical Review Fluids 3 (8), 082601

Asymmetry of line profiles of stellar oscillations measured by Kepler for ensembles of solar-like oscillators: Impact on Mode Frequencies and Dependence on Effective Temperature, O Benomar et al., The Astrophysical Journal 857, 119

Large Eddy Simulation of Turbulent Rayleigh-Bénard Convection in a Cubic Cell, N Foroozani, JJ Niemela, V Armenio, KR Sreenivasan, Direct and Large-Eddy Simulation X, 559-565

2017

Preface. Personal perspectives in nonlinear science: Looking back, looking forward, K.R. Sreenivasan (and others), Indian Academy of Sciences Conference Series, 1, i-xvi

Unmixing demonstration with a twist: A photochromic Taylor-Couette device, E Fonda, KR Sreenivasan, American Journal of Physics 85 (10), 796-800

Reynolds number scaling of velocity increments in isotropic turbulence, KP Iyer, KR Sreenivasan, PK Yeung, Physical Review E 95 (2), 021101

Sensitivity of Helioseismic Measurements of Normal-mode Coupling to Flows and Sound-speed Perturbations, S.M. Hanasoge, M. Woodard, H. M. Antia, L. Gizon, K.R. Sreenivasan, Monthly Notices of the Royal Astronomical Society 470, 1404-1420 (2017),

Reorientations of the large-scale flow in turbulent convection in a cube, N Foroozani, JJ Niemela, V Armenio, KR Sreenivasan, Physical Review E 95 (3), 033107

Instabilitäten und turbulente Strömungen, KR Sreenivasan, H Oertel Jr, Prandtl-Führer durch die Strömungslehre, 351-422

2016

Approach and separation of quantized vortices with balanced cores, C Rorai, J Skipper, RM Kerr, KR Sreenivasan, Journal of Fluid Mechanics 808, 641-667

Shape of a slowly rotating star measured by asteroseismology, L Gizon, et al., Science Advances 2 (11), e1601777

Sub-micron solid air tracers for quantum vortices and liquid helium flows, E Fonda, KR Sreenivasan, DP Lathrop, Review of Scientific Instruments 87 (2), 025106

Seismic sounding of convection in the sun, S Hanasoge, L Gizon, KR Sreenivasan, Annual Review of Fluid Mechanics 48, 191-217

Russell James Donnelly: An obituary. PW Hammer, KR Sreenivasan, JJ Niemela, Physics Today 68 (10), 59-60

John Leask Lumley: An obituary, S. Lebovich, Z. Warhaft, K.R. Sreenivasan, Physics Today 68 (10) 60

2015

Refined similarity hypothesis using 3D local averages, KP Iyer, KR Sreenivasan, PK Yeung, Physical Review E 92 (6), 063024

Convective Transport in the Sun (with S.M. Hanasoge and L. Gizon), In Advances in Computation, Modeling and Control of Transitional and Turbulent Flows, World Scientific, eds. T.K. Sengupta, S.K. Lele, K.R. Sreenivasan and P.A. Davidson, pp. 17-34, 2015

When is DNS a DNS: a brief comment, in Advances in Computation, Modeling and Control of Transitional and Turbulent Flows, World Scientific, eds. T.K. Sengupta, S.K. Lele, K.R. Sreenivasan and P.A. Davidson, World Scientific, pp. 537-538, 2015

Extreme events in computational turbulence, by PK Yeung, XM Zhai, KR Sreenivasan, Proceedings of the National Academy of Sciences 112, 12633-12638, 2015

Turbulent Thermal Convection, E Fonda, KR Sreenivasan, In Selected Topics of Computational and Experimental Fluid Mechanics, 37-49, Springer, 2015

2014

Influence of container shape on scaling of turbulent fluctuations in convection, N. Foroozani, J.J. Niemela, V. Armenio and K.R. Sreenivasan, Phys. Rev. E 90, 063003 (2014)

The Quest to Understand Supergranulation and Large-Scale Convection in the Sun, Hanasoge, Shravan M.; Sreenivasan, Katepalli R, SOLAR PHYSICS 289, 3403-3419

Small-scale universality in fluid turbulence, Schumacher, Joerg; Scheel, Janet D.; Krasnov, Dmitry; et al PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA 111, 10961-10965

The Turbulent Schmidt Number, Donzis, Diego A.; Aditya, Konduri; Sreenivasan, K. R.; et al. JOURNAL OF FLUIDS ENGINEERING-TRANSACTIONS OF THE ASME 136 060912

Viscosity of liquid He-4 and quantum of circulation: Are they related? L'vov, Victor S.; Skrbek, Ladislav; Sreenivasan, Katepalli R., PHYSICS OF FLUIDS 26, 041703

Introduction to quantum turbulence, Barenghi, Carlo F.; Skrbek, Ladislav; Sreenivasan, Katepalli R. PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA 111, 4647-4652

Direct numerical simulation of turbulent mixing at very low Schmidt number with a uniform mean gradient, Yeung, P. K.; Sreenivasan, K. R, PHYSICS OF FLUIDS 26, 015107

Roddam Narasimha, Bhat, G. S.; Sreenivasan, K. R. CURRENT SCIENCE 107, 297-305, 2014

2013

Acceleration and turbulence in Rayleigh-Taylor mixing, K.R. Sreenivasan and S.I. Abarzhi, PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY A - MATHEMATICAL PHYSICAL AND ENGINEERING SCIENCES 371, 20130267, 2013

Propagating and annihilating vortex dipoles in the Gross-Pitaevskii equation, Rorai, Cecilia; Sreenivasan, K. R., Fisher, Michael E., PHYSICAL REVIEW B, 88, 134522, 2013

How similar is quantum turbulence to classical turbulence? L. Skrbek, K.R. Sreenivasan, in Ten Chapters in Turbulence, Cambridge University Press, pp. 405-432, 2013

Seismic constraints on rotation of Sun-like star and mass of exoplanet, Gizon, Laurent; Ballot, Jerome; Michel, Eric; … Sreenivasan, K.R., PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA, 110, 13267-13271, 2013

Anomalous heat transport and condensation in convection of cryogenic helium, Urban, Pavel; Schmoranzer, David; Hanzelka, Pavel, Sreenivasan, K.R. Skrbek, L. PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA 110, 8036-8039, 2013

Spectrum of passive scalars of high molecular diffusivity in turbulent mixing Yeung, P. K., Sreenivasan, K. R. JOURNAL OF FLUID MECHANICS 716, R14, 2013

Turbulent mixing and beyond: non-equilibrium processes from atomistic to astrophysical scales I Abarzhi, S. I., Gauthier, S., Sreenivasan, K. R., PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY A-MATHEMATICAL PHYSICAL AND ENGINEERING SCIENCES 371, 20120436, 2013

2012

Liquid nitrogen in fluid dynamics: Visualization and velocimetry using frozen particles, Enrico Fonda, Katepalli R. Sreenivasan, Daniel P. Lathrop, REVIEW OF SCIENTIFIC INSTRUMENTS, 83, 085101, 2012.

Anomalously weak solar convection, Shravan M. Hanasoge, Thomas L. Duvall, Jr., and Katepalli R. Sreenivasan, Proc. Nat. Acad. Sci. 1206570109, 2012

Dissipation, enstrophy and pressure statistics in turbulence simulations at high Reynolds number, Yeung P. K., Donzis D. A.; Sreenivasan K. R, JOURNAL OF FLUID MECHANICS 700, 5-15, 2012

Special Issue on Small Scale Turbulence Preface, Tordella Daniela; Sreenivasan K. R., PHYSICA D-NONLINEAR PHENOMENA 241, 135-136, 2012

Some results on the Reynolds number scaling of pressure statistics in isotropic turbulence, by Donzis D. A., Sreenivasan K. R., Yeung P. K. PHYSICA D-NONLINEAR PHENOMENA 241, 164-168

*Developed quantum turbulence and its decay, by Skrbek, L. and Sreenivasa,n K. R., PHYSICS OF FLUIDS 24, 011301, 2012

2011

The relationship between the velocity skewness and the amplitude modulation of the small scale by the large scale in turbulent boundary layes. Mathis Romain; Marusic Ivan; Hutchins Nicholas; et al. PHYSICS OF FLUIDS 23, 121702, 2011

Introduction: Summary of papers, Gauthier, S, Abarzhi SI, Sreenivasan KR, PHYSICA SCRIPTA **T142**, 011003, 2010

*G.I. Taylor: The inspiration behind the Cambridge School, Sreenivasan KR, in *A Voyage Through Turbulence*, Cambridge University Press, pp. 127-186, 2011 (editors: P.A. Davidson, H.K. Moffatt, Y. Kaneda and K.R. Sreenivasan)

Preface, Davidson PA, Moffatt HK, Kaneda Y and Sreenivasan KR*, A Voyage Through Turbulence,* Cambridge University Press, pp. ix-xiii, 2011 (editors: P.A. Davidson, H.K. Moffatt, Y. Kaneda and K.R. Sreenivasan)

Epilogue: A turbulence timeline, Davidson PA, Moffatt HK, Kaneda Y and Sreenivasan KR, in *A Voyage Through Turbulence*, Cambridge University Press, pp. 127-186, 2011 (editors: P.A. Davidson, H.K. Moffatt, Y. Kaneda and K.R. Sreenivasan)

Some results on the Reynolds number scaling of pressure statistics in isotropic turbulence, Donzis DA, Sreenivasan KR, Yeung PK, Physica D (in press), 2011

Steven A. Orszag, An obituary. C. Bender, U. Frisch, K.R. Sreenivasan, J.S. Wettlaufer, Phys. Today 64, 66-67, 2011 (with several coauthors)

Jerrold Marsden: An obituary, Sreenivasan KR, Newton PK, JOURNAL OF NONLINEAR SCIENCE **21**, 1-2, 2011

2010

Outline of Round Tables INTRODUCTION, Abarzhi SI, Sreenivasan KR, PHYSICA SCRIPTA **T142**, 011002, 2010

The Batchelor Spectrum for Mixing of Passive Scalars in Isotropic Turbulence, Donzis DA, Sreenivasan KR, Yeung PK, FLOW TURBULENCE AND COMBUSTION **85**, 549-566, 2010

Does confined turbulent convection ever attain the 'asymptotic scaling' with 1/2 power? Niemela JJ, Sreenivasan KR, NEW JOURNAL OF PHYSICS **12**, 115002, 2010

Numerical simulations of Rayleigh-Benard convection for Prandtl numbers between 10(-1) and 10(4) and Rayleigh numbers between 10^5 and 10^9, Silano G, Sreenivasan KR, Verzicco R JOURNAL OF FLUID MECHANICS **662,** 409-446, 2010

The bottleneck effect and the Kolmogorov constant in isotropic turbulence, Donzis DA, Sreenivasan KR JOURNAL OF FLUID MECHANICS **657**, 171-188, 2010

Wall-bounded turbulent flows at high Reynolds numbers: Recent advances and key issues, Marusic I, McKeon BJ, Monkewitz PA, et al. PHYSICS OF FLUIDS **22**, 065103, 2010

Turbulent rotating convection at high Rayleigh and Taylor numbers, Niemela JJ, Babuin S, Sreenivasan KR JOURNAL OF FLUID MECHANICS **649**, 509-522, 2010

Short-term forecasts and scaling of intense events in turbulence, Donzis DA, Sreenivasan KR, JOURNAL OF FLUID MECHANICS **647**, 13-26, 2010

Turbulent mixing and beyond INTRODUCTION, Abarzhi SI, Sreenivasan KR PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY A-MATHEMATICAL PHYSICAL AND ENGINEERING SCIENCES **368**, 1539-1546, 2010

Lagrangian views on turbulent mixing of passive scalars, Sreenivasan KR, Schumacher J, PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY A-MATHEMATICAL PHYSICAL AND ENGINEERING SCIENCES **368**, 1561-1577, 2010

High-performance holographic technologies for fluid-dynamics experiments, Orlov SS, Abarzhi SI, Oh SB, Sreenivasan KR PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY A-MATHEMATICAL PHYSICAL AND ENGINEERING SCIENCES 368, 1705-1737, 2010

2009

The decay of a quantized vortex ring and the influence of tracer particles. J. Low Temp. Phys. 156, 84-94, 2009 (with G.P. Bewley)

CICLoPE - a response to the need for high Reynolds number experiments. Fluid Dyn. Res. 41, 021407 (21 pages), 2009 (with A. Talamelli, F. Persiani, J.H.M. Fransson, P.H. Alfredsson, A.V. Johansson, H.M. Nagib, J.D. Ruedi & P.A. Monkewitz)

Turbulent convection with time-dependent forcing. J. Phys. Conf. Ser. 150, 032072 (4 pages), 2009 (with J.J. Niemela)

Stretching the boundaries in turbulent convection. J. Phys. Conf. Ser. 150, 032073 (4 pages), 2009 (with J.J. Niemela)

Specific roles of fluid properties in non-Boussinesq thermal convection at the Rayleigh number of 2×10^8 Europhys. Lett. 86, 14006 (6 pages), 2009 (with A. Sameen & R. Verzicco)

Numerical simulations of thermal convection at high Prandtl numbers. Submitted for publication (with G. Silano & R. Verzicco)

Particle dispersion in a stratified Ekman layer. Submitted for publication (with V. Stocca & V. Armenio)

2008

Visualization of quantized vortex dynamics. In IUTAM Symposium on Computational Physics and New Perspectives in Turbulence, pp. 163-170, edited by Y. Kaneda, Springer, 2008 (with G.P. Bewley, M.S. Paoletti & D.P. Lathrop)

A comparison of turbulent thermal convection between conditions of constant temperature and constant heat flux. J. Fluid Mech. 595, 203-219, 2008 (with R. Verzicco)

Dissipation and enstrophy in isotropic turbulence: Resolution effects and scaling in direct numerical simulations. Phys. Fluids 20, 045108 (16 pages), 2008 (with D.A. Donzis & P.K. Yeung)

Formation of the "superconducting" core in turbulent thermal convection. Phys. Rev. Lett. 100, 184502 (4 pages), 2008 (with J.J. Niemela)

Particles for tracing turbulent liquid helium. Experiments in Fluids 44, 887-896, 2008 (with G.P. Bewley & D.P. Lathrop)

The state of the art in hydrodynamic turbulence: Past successes and future challenges. Physica D 237, 2167-2183, 2008 (with I. Procaccia)

Taylor's frozen-flow hypothesis in Burgers turbulence. Phys. Rev. E 77, 065302(R) (4 pages), 2008 (with A. Bahraminasab, M.D. Niry, J. Davoudi, M. Reza Rahimi Tabar & A.A. Masoudi)

Complexity and hydrodynamic turbulence. In Contemporary Physics: Proceedings of the International Symposium, pp. 97-106, edited by J. Aslam, F. Hussain & Riazuddin. World Scientific, 2008

Characterization of reconnecting vortices in superfluid helium. Proc. Nat. Acad. Sci. 105, 13707-13710, 2008 (with G.P. Bewley, M.S. Paoletti & D.P. Lathrop)

Non-Boussinesq convection at moderate Rayleigh numbers in low temperature gaseous helium. Phys. Scr. T132, 014053 (6 pages), 2008 (with A. Sameen & R. Verzicco)

Visualization of superfluid helium flow. J. Phys. Soc. Jpn. 77, 111007 (7 pages), 2008 (with M.S. Paoletti, R.B. Fiorito & D.P. Lathrop)

Velocity statistics distinguish quantum turbulence from classical turbulence. Phys. Rev. Lett. 101, 154501 (4 pages), 2008 (with M.S. Paoletti, M.E. Fisher & D.P. Lathrop)

Steven Robert Harry Kraichnan, An Obituary. Phys. Today 61, May issue, 70-71, 2008 (with S. Chen, G. Eyink, G. Falkovich, U. Frisch & S. Orszag)

Foreword Science dissemination using Open Access: A compendium of selected literature on Open Access, ed. by E. Canessa & M. Zennaro. ICTP, 2008.

Some comments on nonlinear dynamics. Conference report: Perspective on nonlinear dynamics. ICTP, Trieste, July 2007.

Pramana: Journal of Physics 70, 959-963, 2008

A personal account of Professor Abdus Salam. Int. J. Modern Phys. A 23, 3799-3810, 2008; reprinted in Salam + 50; proceedings of the conference, ed. by Michael Duff. Imperial College Press, 2008.

2007

Statistics and geometry in high-Schmidt number scalar mixing. In Progress in Turbulence II. Proceedings of the iTi Conference in Turbulence, held in Bad Zwischenahn, 2005, pp. 235-239, edited by M. Oberlack, G. Khujadze, S. Guenther, T. Weller, M. Frewer, J. Peinke & S. Barth (Springer Proceedings in Physics, 109). Springer, 2007 (with J. Schumacher, D. Kushnir, A. Brandt & H. Zilken)

Numerical experiments of turbulent thermal convection at high Rayleigh numbers. In Progress in Turbulence II. Proceedings of the iTi Conference in Turbulence, held in Bad Zwischenahn, 2005, pp. 177-180, edited by M. Oberlack, G. Khujadze, S. Guenther, T. Weller, M. Frewer, J. Peinke and S. Barth. (Springer Proceedings in Physics, 109). Springer, 2007 (with K. Koal, G. Amati, F. Massaioli & R. Verzicco)

Introduction: Scaling and structure in high Reynolds number wall-bounded flows. Phil. Trans. Roy. Soc. A. 365, 635-646, 2007 (with B.J. McKeon)

Asymptotic exponents from low-Reynolds-number flows. New J. Phys. 9, 89 (19 pages), 2007 (with J. Schumacher & V. Yakhot)

Inertial waves in rotating grid turbulence. Phys. Fluids 19, 071701 (4 pages), 2007 (with G.P. Bewley, D.P. Lathrop & L.R.M. Maas)

Local dissipation scales in turbulence. In Advances in Turbulence XI; Proc. of the 11th EUROMECH European Turbulence Conference, 2007, Porto, Portugal, pp. 200-202, edited by J.M.L.M. Palma & A. Silva Lopes. (Springer Proceedings Series, 117). Springer, 2007 (with J. Schumacher & V. Yakhot)

Preface to "100 Buone Ragioni per Diventare Scienziati" the Italian Translation of the English Original "100 Reasons to be a Scientist". ICTP, 2007.

Preface to "The ICTP Experience: Diploma and Step Students". ICTP, 2007.

Preface to "The ICTP Experience: The TRIL Programme". ICTP, 2007.

Introduction to "Good Morning Prof. Budinich" the English Translation of the Italian original "Buongiorno Prof. Budinich", by P. Greco. Milano, Bompiani, 2007

A perspective on the status of mathematics in India. Curr. Sci. 93, 1080-1087, 2007

Water crisis in India. Curr. Sci. 93, 1335, 2007

2006

The mean velocity distribution near the peak of the Reynolds shear stress, extending also to the buffer region. In IUTAM Symposium on One Hundred Years of Boundary Layer Research, pp. 241-246, edited by G.E.A. Meier, K.R. Sreenivasan and H.-J. Heinemann, Springer, 2006 (with A. Bershadskii)

Onsager and the theory of hydrodynamic turbulence. Rev. Mod. Phys. 78, 87-135, 2006 (with G.L. Eyink) Pages from the paper formed the cover page of the issue.

Turbulent convection at high Rayleigh numbers and aspect ratio 4. J. Fluid Mech. 557, 411-422, 2006 (with J.J. Niemela)

Lessons from hydrodynamic turbulence. Phys. Today 59 (April issue), 43-49, 2006 (with G. Falkovich); see also response to a comment: Phys. Today 59 (November issue), p. 17, 2006

Finite-Reynolds-number effects in turbulence using logarithmic expansions. J. Fluid Mech. 554, 477-498, 2006 (with A. Bershadskii) This article was commissioned for the 50th anniversary issue of the journal.

Superfluid helium: Visualization of quantized vortices. Nature 441, 588, 2006 (with G.P. Bewley & D.P. Lathrop)

Reply to “Comment on 'Intermittency exponent of the turbulent energy cascade'”. Phys. Rev. E 73, 068302, 2006

Characteristic angular scales in cosmic microwave background radiation. J. Stat. Mech: Theory and Experiments, 2006 (November issue) 11008 (17 pages) (with F. Ghasemi, A. Bahraminasab, M. Sadegh Movahed, S. Rahvar & M. Reza Rahimi Tabar)

Clustering properties in turbulent signals. J. Stat. Phys. 125, 1145-1157, 2006 (with A. Bershadskii)

The use of cryogenic helium for classical turbulence: Promises and hurdles. J. Low Temp. Phys. 143, 163-212, 2006 (with J.J. Niemela)

Averaging operators in turbulence – Falkovich and Sreenivasan reply. Physics Today, 59, 16-17, 2006

Cryogenic buoyancy-driven turbulence. In Low Temp. Phys: 24th International Conference on Low Temperature Physics, pp.199-202, edited by Y. Yakano, S.P. Hershfield, S.O. Hill, P.J. Hirschfeld & A.M. Goldman (AIP Conference Proceedings, 850). American Institute of Physics, 2006 (with J.J. Niemela and R.J. Donnelly)

Conference report: The IAEA's international fusion and plasma physics activities - report on the 49th regular session of the IAEA General Conference and the 8th Scientific Forum. Nucl. Fusion 46, 667-672, 2006 (with W. Burkart)

ICTP as a model for excellence for doctoral and post-doctoral training in the South. In "Sharing Knowledge Across the Mediterranean Area" pp. 19-28, edited by P.

Faugeras, A. Hoummada & R. Klapisch. (NATO Security through Science Series, E: Human and Societal Dynamics, 12). Amsterdam, IOS Press, 2006.

Scientific measure of Africa's connectivity. Information Technologies and International Development 3 (No.1), 55-64, 2006 (with M. Zennaro, E. Canessa, A. A. Rehmatullah & R. L. Cottrell)

Prospects and problems for world energy: Remarks at the World Renewable Energy Congress. The Pantaneto Forum, issue 24 (3 pages) 2006

Raising the level of science in developing countries. APS News, 15, March issue, 4, 2006

Access to scholarly literature via a free knowledge management enabler: An opportunity for scientists in developing countries. Knowledge Management for Development Journal 2 (No. 3), 75-85, 2006 (with E. Canessa, C. Fonda & M. Zennaro)

Foreword to the proceedings of the International Conference on "Frontiers in Fluid Mechanics" held in Bangalore, India, October 26-28, 2006

2005

Logarithmically modified scaling of temperature structure functions in thermal convection. Europhys. Lett. 69, 75-80, 2005 (with A. Bershadskii & J.J. Niemela)

Scalar dissipation rate and dissipative anomaly in isotropic turbulence. J. Fluid Mech. 532, 199-216, 2005 (with D.A. Donzis & P.K. Yeung)

Finite-size scaling of two-point statistics and the turbulent energy cascade generators. Phys. Rev. E 71, 026309 (12 pages), 2005 (with J. Cleve, T. Dziekan, J. Schmiegel, O.E. Barndoff-Nielsen, B.R. Pearson & M. Greiner)

Grid generated turbulence in helium II. J. Low Temp. Phys. 138, 537-542, 2005 (with J.J. Niemela & R.J. Donnelly)

Observational impact of surrogacy on the turbulent energy cascade. In Progress in Turbulence, pp. 55-58, edited by J. Peinke, A. Kittel, S. Barth & M. Oberlack (Springer proceedings in physics, 101) Springer-Verlag, 2005 (with M. Greiner, J. Cleve & J. Schumacher)

Fluctuations of temperature gradients in turbulent thermal convection. Phys. Rev. E 71, 035302(R) (4 pages), 2005 (with A. Bershadskii & J.J. Niemela)

Very fine structures in scalar mixing. J. Fluid. Mech. 531, 113-122, 2005 (with J. Schumacher & P.K. Yeung)

Logarithmic scaling in the near-dissipation range of turbulence. Pramana: Journal of Physics 64, 315-321, 2005 (with A. Bershadskii)

Anomalous scaling of low-order structure functions of turbulent velocity. J. Fluid Mech. 533, 183-192, 2005 (with S.Y. Chen, B. Dhruva, S. Kurien & M.A. Taylor)

Does the flatness of the velocity derivative blow up at a finite Reynolds number? Pramana: Journal of Physics 64, 939-945, 2005 (with A. Bershadskii)

High-Reynolds-number simulation of turbulent mixing. Phys. Fluids 17, 081703 (4 pages), 2005 (with P.K. Yeung & D.A. Donzis)

Rayleigh-Taylor turbulent mixing in immiscible, miscible and stratified fluids. Phys. Fluids 17, 081705 (4 pages), 2005 (with S.I. Abarzhi & A. Gorobets)

Anomalous scaling of structure functions and dynamic constraints on turbulence simulations. J. Stat. Phys. 121, 823-841, 2005 (with V. Yakhot)

Turbulent thermal convection at high Rayleigh numbers for a Boussinesq fluid of constant Prandtl number. Phys. Fluids 17, 121701 (4 pages), 2005 (with G. Amati, K. Koal, F. Massaioli & R. Verzicco)

Statistics and geometry of passive scalars in turbulence. Phys. Fluids 17, 125107 (9 pages), 2005 (with J. Schumacher)

Critical fluctuation of wind reversals in convective turbulence. Phys. Rev. E 72, 066308 (5 pages), 2005 (with R.C. Hwa, C.B. Yang, A. Bershadskii & J.J. Niemela)

Scalar dissipation fronts in high-Schmidt-number mixing. Chaos 15, 041105, 2005 (with J. Schumacher, H. Zilken & B. Eckhardt). Pictures from the paper appeared on the cover page of "Gallery of Nonlinear Images", American Institute of Physics Press.

Sam Edwards and the turbulence theory. In Stealing the Gold: A Celebration of the Pioneering Physics of Sam Edwards, p. 66-85, edited by P.M. Goldbart, N. Goldenfeld & D. Sherrington. Oxford University Press, 2005 (with G.L. Eyink)

Comment on: William C. Brainard and Herbert E. Scarf's "How to Compute Equilibrium Prices in 1891". Amer. J. Economics and Sociology 64, 89-92, 2005; reprinted in: Celebrating Irving Fisher: The legacy of a great economist, ed. by R.W. Dimand and J. Geanakoplos. Blackwell, 2005

A Web community to foster science in developing countries: www.ictp.it. In Proc. IADIS International Conference on Web Based Communities 2005, Algarve, Portugal, pp. 23-25, 2005 (with C. Fonda, M. Zennaro & E. Canessa)

A global role for physics. Phys. World 18, October issue, 38-41, 2005

2004

Collisions between Alfven wave packets in cosmic electromagnetic fields. Int. J. Mod. Phys. D 13, 281-290, 2004 (with A. Bershadskii). An updated electronic version with greater emphasis on cosmic microwave background has been posted under the title "Gradient measure and extended self-similarity of the cosmic microwave background anisotropy"; see arXiv:astro-ph/0403702 v2 27 Apr. 2005.

Possible effects of small-scale intermittency in turbulent reacting flows. Flow Turbul. Combust. 72, 115-131, 2004

Simulations of three-dimensional turbulent mixing for Schmidt numbers of the order 1000. Flow Turbul. Combust. 72, 333-347, 2004 (with P.K. Yeung, S. Xu & D.A. Donzis)

Multiscale SOC in turbulent convection. Physica A 340, 574-579, 2004 (with A. Bershadskii & J.J. Niemela)

"Clusterization" and intermittency of temperature fluctuations in turbulent convection. Phys. Rev. E 69, 056314 (5 pages), 2004 (with A. Bershadskii, J.J. Niemela & A. Praskovsky)

Sign-symmetry of temperature structure functions. Phys. Rev. E 69, 066315 (7 pages), 2004 (with K.G. Aivalis, S. Kurien & J. Schumacher)

Solar flares and thermal wind reversals: Critical metastable states. Phys. Lett. A 331, 15-19, 2004 (with A. Bershadskii & J.J. Niemela)

Thermal convection at high Rayleigh numbers. In The Proceedings of the 9th General Conference and Twentieth Anniversary Meeting of the Third World Academy of Sciences, held at Beijing (16-19 October 2003), pp. 117-123, TWAS, 2004 (with J.J. Niemela)

Intermittency and the passive nature of the magnitude of the magnetic field. Phys. Rev. Lett. 93, 064501 (4 pages), 2004 (with A. Bershadskii)

Intermittency exponent of the turbulent energy cascade. Phys. Rev. E 69, 066316 (6 pages), 2004 (with J. Cleve, M. Greiner & B.R. Pearson)

Towards a dynamical theory of multifractals in turbulence. Physica A 343, 147-155, 2004 (with V. Yakhot)

Turbulent flows. Chapter 7 in Prandtl's Essentials of Fluid Mechanics, 2nd ed., pp. 319-355, edited by H. Oertel. (Applied mathematics series, v.158) Springer-Verlag, 2004

Science in the South. Editorial in Science 306, 1259, November 19 issue, 2004

ICTP: the next 40 years. CERN Courier 44, November issue, 58, 2004

"Three quarks for Muster Mark," a brief introduction for "A Rose for Joyce" by R.A. Crivelli, MGS Press, 2004

Preface: Special Issue in Tribute to Robert Anthony Antonia. Flow Turb. Combust. 72, 91-92, 2004 (with R.W. Bilger)

2003

Derivative moments in turbulent shear flows. Phys. Fluids 15, 84-90, 2003 (with J. Schumacher & P.K. Yeung)

Confined turbulent convection. J. Fluid Mech. 481, 355-384, 2003 (with J.J. Niemela)

Schmidt number dependence of derivative moments for quasi-static straining motion. J. Fluid Mech. 479, 221-230, 2003 (with J. Schumacher & P.K. Yeung)

On the effects of surrogacy of energy dissipation in determining the intermittency exponent in fully developed turbulence. Europhys. Lett. 61, 756-761, 2003 (with J. Cleve & M. Greiner)

A memory model for seasonal variations of temperature in mid-latitudes. In Perspectives and Problems in Nonlinear Physics, pp. 361-374, edited by E. Kaplan, J.E. Marsden & K.R. Sreenivasan. Springer-Verlag, 2003 (with D.D. Joseph)

Rayleigh-number evolution of large-scale coherent motion in turbulent convection. Europhys. Lett. 62, 829-833, 2003 (with J.J. Niemela)

Kolmogorov's third hypothesis and turbulent sign statistics. Phys. Rev. Lett. 90, 254501 (4 pages), 2003 (with Q. Chen, S. Chen & G.L. Eyink)

Professor Narasimha's contributions to fluid mechanics: A perspective. In Advances in Fluid Mechanics, pp. 1-10, edited by M. Alam, R. Govindarajan, O.N. Ramesh & K.R. Sreenivasan. Bangalore, Jawaharlal Nehru Center for Advanced Scientific Research, 2003.

Thermal turbulence in cryogenic helium gas. In Proc. of the 23rd International Conference on Low Temperature Physics (LT23), Physica B 329-333, Pt.1, 429-430, 2003 (with J.J. Niemela)

Scaling properties in rotating homogeneous turbulence. In Proc. of the 4th Joint ASME Fluids Engineering Conference, July 6-10, 2003, Honolulu, Hawaii, FEDSM2003 SEM-45332 (6 pages), 2003 (with P.K. Yeung & J. Xu)

Geometric features of the mixing of passive scalars at high Schmidt numbers. Phys. Rev. Lett. 91, 174501 (4 pages), 2003 (with J. Schumacher)

Multiscale self-organized criticality and powerful X-ray flares. Eur. Phys. J. B 35, 513-515, 2003 (with A. Bershadskii)

Extended self-similarity of the small-scale cosmic microwave background anisotropy. Phys. Lett. A 319, 21-23, 2003 (with A. Bershadskii)

Setting new sights for the ICTP. Comment in the Forum of Phys. World 16, April issue, 15, 2003

The mores of publishing in science. Curr. Sci. 84, 483, 2003

2002

*High-Reynolds-number turbulence in small apparatus: Grid turbulence in cryogenic liquids. J. Fluid Mech. 452, 189-197, 2002 (with C.M. White & A.N. Karpetis)

Self-sustained large-scale flow in turbulent cryogenic convection. J. Low Temp. Phys. 126, 297-302, 2002 (with J.J. Niemela, L. Skrbek & R.J. Donnelly)

The use of particle image velocimetry in the study of turbulence in liquid helium. J. Low Temp. Phys. 126, 327-332, 2002 (with R.J. Donnelly, A.N. Karpetis, J.J. Niemela, W.F. Vinen & C.M. White)

Temperature structure functions for air flow over moderately-heated ground. Phys. Fluids 14, 2439-2446, 2002 (with K.G. Aivalis, Y. Tsuji, J. Klewicki & C. Biltoft)

Mean wind and its reversal in thermal convection. Phys. Rev. E 65, 056306 (11 pages), 2002 (with A. Bershadskii & J.J. Niemela)

Multiscaling of cosmic microwave background radiation. Phys. Lett. A 299, 149-152, 2002 (with A. Bershadskii)

Temperature structure functions in the Bolgiano regime of thermal convection. Phys. Rev. E 66, 036303 (6 pages), 2002 (with L. Skrbek, J.J. Niemela & R.J. Donnelly)

Thermal fluctuations and their ordering in turbulent convection,. Physica A 315, 203-214, 2002 (with J.J. Niemela)

Schmidt number effects on turbulent transport with uniform mean scalar gradient. Phys. Fluids 14, 4178-4191, 2002 (with P.K. Yeung & S. Xu)

2001

Role of cryogenic helium in classical fluid dynamics: Basic research and model testing. Adv. Appl. Mech. 37, 239-276, 2001 (with R.J. Donnelly)

Comments on high Rayleigh number convection. In Proc. of the IUTAM Symposium on Geometry and Statistics of Turbulence, pp. 269-279, edited by T. Kambe, T. Nakano & T. Miyauchi. Springer, 2001 (with J.J. Niemela, L. Skrbek & R.J. Donnelly)

Measures of anisotropy and the universal properties of turbulence. In New Trends in Turbulence, pp. 53-111, NATO Advanced Study Institute, Les Houches, 2000. Ed. by M. Lesieur, A. Yaglom & F. David. Springer and EDP-Sciences, 2001 (with S. Kurien)

Anisotropy of small-scale scalar turbulence. J. Fluid Mech. 448, 279-288, 2001 (with S. Kurien and K.G. Aivalis)

*The wind in confined thermal convection. J. Fluid Mech. 449, 169-178, 2001 (with J.J. Niemela, L. Skrbek & R.J. Donnelly)

Dynamical equations for high-order structure functions, and a comparison of a mean field theory with experiments in three-dimensional turbulence. Phys. Rev. E 64, 056302 (14 pages), 2001 (with S. Kurien)

Energy spectrum of grid-generated He II turbulence. Phys. Rev. E 64, 067301 (4 pages), 2001 (with L. Skrbek & J.J. Niemela)

2000

Turbulent convection at very high Rayleigh numbers. Nature 404, 837-840, 2000 (with J.J. Niemela, L. Skrbek & R.J. Donnelly)

The onset of drag reduction by dilute polymer additives, and the maximum drag reduction asymptote. J. Fluid Mech. 409, 149-164, 2000 (with C.M. White)

Cryogenic ultra-high Rayleigh number turbulence. In Advances in Turbulence VIII, Proc. of the 8th European Turbulence Conference, pp. 925-928, ed. C. Dopazo. Barcelona, CIMNE, 2000

The control of combustion instability: A perspective. Current Science 79, 867-883, 2000 (with S. Raghu)

Statistics of wind direction and its increments. Phys. Fluids 12, 1529-1534, 2000 (with E. van Doorn, B. Dhruva & V. Cassella)

Scaling structure of the velocity statistics in atmospheric boundary layers. Phys. Rev. E 61, 407-421, 2000 (with S. Kurien, V. S. L'vov & I. Procaccia)

Anisotropic scaling contributions to high-order structure functions in high-Reynolds-number turbulence. Phys. Rev. E 62, 2206-2212, 2000 (with S. Kurien)

Laser wipers. Phys. Rev. E 62, 4421-4423, 2000 (with A.N. Karpetis & C.M. White)

Time-dependent simulations of laminar and turbulent flows in COIL geometries. AIAA Paper 2000-2572, in 31st Plasma Dynamics and Lasers Conference, 19-22 June 2000, Denver, CO (8 pages) (with J.I. Galea & S.A. Orszag)

New results in cryogenic helium flows at ultra-high Reynolds and Rayleigh numbers. J. Low Temp. Phys. 121, 417-422, 2000 (with J.J. Niemela, L. Skrbek, C. Swanson, S. Hall & R.J. Donnelly)

1999

Fluid Turbulence. Rev. Mod. Phys. 71, S383-S395, 1999; reprinted in More Things in Heaven and Earth: A Celebration of Physics at the Millennium, pp.644-664, edited by B. Bederson. Springer, 1999

One of the authors of the National Research Council Report: Condensed Matter and Materials Physics: Basic Research for Tomorrow's Technology, 308 pages. National Academy Press, 1999

The decay of grid turbulence in polymer and surfactant solutions. Phys. Fluids 11, 2387-2393, 1999 (with E. van Doorn & C.M. White)

The wall-normal position in pipe and channel flows at which viscous and turbulent shear stresses are equal. Phys. Fluids 11, 3186-3188, 1999 (with A. Sahay)

The effects of large scales on the inertial range in high-Reynolds-number turbulence. arXiv:chao-dyn/9906041v1 24 Jun 1999 (with B. Dhruva & I. San Gil)

1998

An update on the energy dissipation rate in isotropic turbulence. Phys. Fluids 10, 528-529, 1998

Does molecular rotation affect the transition Reynolds number? Phys. Lett. A 238, 323-327, 1998 (with C.M. White)

Differential diffusion in low Reynolds number water jets. Phys. Fluids 10, 1135-1146, 1998 (with J.R. Saylor)

Comment on "Isotropic turbulence: Important differences between true dissipation and its one-dimensional surrogate". Phys. Rev. Lett. 80, 3883, 1998 (with G. Stolovitzky & C. Meneveau)

Helium flows at ultra-high Reynolds and Rayleigh numbers: Opportunities and challenges. In Flow at Ultra-High Reynolds and Rayleigh Numbers: A Status Report, pp. 29-51, edited by R.J. Donnelly & K.R. Sreenivasan. Springer, 1998

Is there scaling in high-Reynolds-number turbulence? Prog. Theo. Phys. Suppl. 130, 103-120, 1998 (with B. Dhruva)

Extraction of anisotropic contributions in turbulent flows. Phys. Rev. Lett. 81, 5330-5333, 1998 (with I. Arad, B. Dhruva, S. Kurien, V.S. L'vov & I. Procaccia)

1997

The phenomenology of small-scale turbulence. Annu. Rev. Fluid Mech. 29, 435-472, 1997 (with R.A. Antonia)

The onset of chaos in the wake of an oscillating cylinder: Experiment and the dynamics of the circle map. Pramana: Journal of Physics 48, 693-703, 1997 (with D.J. Olinger & A.B. Chhabra)

Inertial range scalings of dissipation and enstrophy in isotropic turbulence. Phys. Rev. Lett. 79, 1253-1256, 1997 (with S. Chen & M. Nelkin)

Refined similarity hypothesis for transverse structure functions in fluid turbulence. Phys. Rev. Lett. 79, 2253-2256, 1997 (with S. Chen, M. Nelkin & N. Cao)

The persistence of viscous effects in the overlap region, and the mean velocity in turbulent pipe and channel flows. In Self-Sustaining Mechanisms of Wall Turbulence, pp. 253-272, edited by R. Panton (Advances in Fluid Mechanics, 15) Computational Mechanics Publications, Southampton, U.K., 1997 (with A. Sahay)

Fusion rules in Navier-Stokes turbulence: First experimental tests. Phys. Rev. Lett. 79, 3174- 3177, 1997 (with A.L. Fairhall, B. Dhruva, V.S. L'vov & I. Procaccia)

Transverse structure functions in high-Reynolds-number turbulence. Phys. Rev. E 56, R4928-R4930, 1997 (with B. Dhruva & Y. Tsuji)

Preface: Special Issue on Nonlinearity and chaos in the physical sciences. Pramana: Journal of Physics 48, 3-5, 1997 (with R. Ramaswamy)

1996

Properties of velocity circulation in three-dimensional turbulence. Phys. Rev. Lett. 76, 616- 619, 1996 (with N. Cao & S. Chen)

The passive scalar spectrum and the Obukhov-Corrsin constant. Phys. Fluids 8, 189-196, 1996

Fractal geometry and multifractal measures in fluid mechanics. In Research Trends in Fluid Dynamics, pp. 263-285, edited by J.L. Lumley, A. Acrivos, L.G. Leal & S. Leibovich. AIP Press, NY, 1996

Gaussian nature of the COBE data from multipoint correlations. Phys. Rev. D 53, 6796-6804, 1996 (with S.I. Vainshtein & A. Malagoli)

Asymmetry of velocity increments in fully developed turbulence and the scaling of low-order moments. Phys. Rev. Lett. 77, 1488-1491, 1996 (with S.I. Vainshtein, R. Bhiladvala, I. San Gil, S. Chen & N. Cao)

Statistical dependence of inertial range properties on large scales in a high–Reynolds–number shear flow. Phys. Rev. Lett. 77, 2218-2221, 1996 (with G. Stolovitzky)

Diurnal variation of heart rate fractal dimension in heart disease patients. J. Amer. Coll. Cardiol. 27, 95A-96A, 1996 (with R.J. Lampert, A.J. Denner, L.E. Rosenfeld & F.A. Lee)

Scaling of low-order structure functions in homogeneous turbulence. Phys. Rev. Lett. 77, 3799-3802, 1996 (with N. Cao & S. Chen)

The search for a low-dimensional characterization of a local climate system. Phil. Trans. Roy. Soc. Lond. 354A, 1715-1750, 1996 (with A. Sahay)

1995

Refined similarity hypotheses for passive scalars mixed by turbulence. J. Fluid Mech. 297, 275-291, 1995 (with G. Stolovitzky & P. Kailasnath)

Scaling exponents near the onset of turbulence. Phys. Rev. Lett. 75, 1942-1945, 1995

Turbulent cascades. J. Stat. Phys. 78, 311-333, 1995 (with G. Stolovitzky)

The energy dissipation rate in turbulent shear flows. In Developments in Fluid Mechanics and Aerospace Engineering, Proceedings of the symposium held at Bangalore, Dec. 9-10, 1993, pp. 159-190, edited by S.M. Deshpande, A. Prabhu, K.R. Sreenivasan & P.R. Viswanath. Bangalore, Interline Publishers, 1995

On the universality of the Kolmogorov constant. Phys. Fluids 7, 2778-2784, 1995

Scaling properties of circulation in moderate-Reynolds-number turbulent wakes. Phys. Rev. Lett. 75, 433-436, 1995 (with A. Juneja & A.K. Suri)

Small-scale intermittency in turbulence. In Twelfth Australasian Fluid Mechanics Conference, pp. 549-556, edited by R.W. Bilger. University of Sydney, 1995

Intermittency, the second-order structure function, and the turbulent energy dissipation rate. Phys. Rev. E 52, 3242-3244, 1995 (with G. Stolovitzky)

1994

Sign-singular measure and its association with turbulent scalings. Phys. Rev. E 49, R2521-2524, 1994 (with S.I. Vainshtein & Y.Du)

Kolmogorov's 4/5ths law and intermittency in turbulence. Phys. Rev. Lett. 73, 3085-3088, 1994 (with S.I. Vainshtein)

Synthetic turbulence. Phys. Rev. E 49, 5179-5194, 1994 (with A. Juneja, D.P. Lathrop & G. Stolovitzky)

Independent velocity increments and Kolmogorov's refined similarity hypotheses. In The Chaos Paradigm: Developments and Applications in Engineering and Science, pp. 97-105, edited by R.A. Katz. (AIP conference proceedings, 296). AIP, 1994 (with G. Stolovitzky)

Scaling exponents for turbulence and other random processes, and their relationships with multifractal structure. Phys. Rev. E 50, 1823-1835, 1994 (with S.I. Vainshtein, R.T. Pierrehumbert, V. Kashyap & A. Juneja)

Fractals in fluid mechanics. Fractals 2, 253-263, 1994

Questions in fluid mechanics: Opportunities and challenges of flow experiments in helium. J. Fluids Engg. 116, 395-396, 1994 (with R.J. Donnelly)

Kolmogorov's refined similarity hypotheses for turbulence and general stochastic processes. Rev. Mod. Phys. 66, 229-240, 1994 (with G. Stolovitzky)

Multiplicative models for turbulent energy dissipation. Acta Mechanica (Suppl.) 4, 113-123, 1994. This is a slightly expanded form of the article entitled: Self-similar multiplier distributions and multiplicative models for energy dissipation in high-Reynolds-number turbulence. In Theoretical and Applied Mechanics, 1992. Proc. of the ICTAM meeting held in Haifa, Israel, pp. 395-406, edited by S.R. Bodner, J. Singer, A. Solar & Z. Hashin, Elsevier, 1993. (with G. Stolovitzky)

One of the authors of the Report from the Department of Physics, University of Oregon: Cryogenic helium gas convection research; A discussion of opportunities for using the cryogenic facilities of the SSC Laboratories for High Rayleigh Number and High Reynolds Number Turbulence Research, ed. by Russell J. Donnelly. Oct. 1994. Official DOE reports, reviews and letters from the community concerning the report with the same title, compiled and commented by Russell J. Donnelly, editor. Jan. 1995

1993

Scaling of structure functions. Phys. Rev. E 48, R33-R36, 1993 (with G. Stolovitzky)

The instability and breakdown of a round variable-density jet. J. Fluid Mech. 249, 619-664, 1993 (with D.M. Kyle)

An update on the intermittency exponent in turbulence. Phys. Fluids A 5, 512-514, 1993 (with P. Kailasnath)

Scaling functions and scaling exponents in turbulence. Phys. Rev. E 48, R3217-3220, 1993 (with G. Stolovitzky & A. Juneja)

Conditional scalar dissipation rates in turbulent wakes, jets, and boundary layers. Phys. Fluids A 5, 3207-3215, 1993 (with P. Kailasnath & J.R. Saylor)

Zero crossings of velocity fluctuations in turbulent boundary layers. Phys. Fluids A 5, 2879-2885, 1993 (with P. Kailasnath)

The thickness distribution of OH regions in a turbulent diffusion flame. Combust. Sci. and Tech. 89, 1-7, 1993 (with A.W. Johnson & M. Winter)

Observations of liquid jets injected into a highly accelerated supersonic boundary layer. AIAA J. 31, 1827-1834, 1993 (with A.W. Johnson)

Self-similar multiplier distributions and multiplicative models for energy dissipation in high- Reynolds-number turbulence. In Theoretical and applied mechanics, 1992. Proc. of the ICTAM Meeting Held in Haifa, Israel, pp. 395-406, edited by S.R. Bodner, J. Singer, A. Solar & Z. Hashin. Elsevier, 1993.

Also, in a slightly expanded form entitled: Multiplicative models for turbulent energy dissipation. Acta Mechanica, (Suppl.), 4, 113-123, 1994 (with G. Stolovitzky)

A scheme for generating initial velocity field for DNS of isotropic turbulence. unpublished (with A. Juneja & G. Erlebacher)

1992

Scale-invariant multiplier distributions in turbulence. Phys. Rev. Lett. 68, 2762-2765, 1992 (with A.B. Chhabra)

The probability density of velocity increments in turbulent flows. Phys. Rev. Lett. 68, 2766-2769, 1992 (with P. Kailasnath & G. Stolovitzky)

Kolmogorov's refined similarity hypotheses. Phys. Rev. Lett. 69, 1178-1181, 1992 (with G. Stolovitzky & P. Kailasnath)

Sign-singular measures: Fast magnetic dynamos, and high-Reynolds-number fluid turbulence. Phys. Rev. Lett. 69, 2654-2657, 1992 (with E. Ott, Y. Du, A. Juneja & A. Suri)

Accumulation rates of spiral-like structures in fluid flows. Proc. Roy. Soc. Lond. 437A, 391-401, 1992 (with R.M. Everson)

1991

Fractal geometry of isoscalar surfaces in turbulence: Theory and experiment. Phys. Rev. Lett. 67, 1739-1742, 1991 (with P. Constantin & I. Procaccia)

Do scalar fluctuations in turbulent shear flows possess local universality? Physica D 51, 567-568, 1991

The multifractal nature of the turbulent energy dissipation. J. Fluid Mech. 224, 429-484, 1991 (with C. Meneveau)

On local isotropy of passive scalars in turbulent shear flows. Proc. Roy. Soc. Lond. A 434, 165-182, 1991

Fractals and multifractals in fluid turbulence. Annu. Rev. Fluid Mech. 23, 539-600, 1991 (Translated into Japanese)

Probabilistic multifractals and negative dimensions. In New Perspectives in Turbulence, pp. 271-288, edited by L. Sirovich. Springer-Verlag, 1991 (with A.B. Chhabra)

Negative dimensions: Theory, computation, and experiment. Phys. Rev. A 43, 1114-1117, 1991 (with A.B. Chhabra)

Turbulent flow. In Encyclopedia of Science and Technology, 7th ed., v. 18, pp. 696-700. McGraw Hill, 1991

Characterization and compression of turbulent signals and images using wavelet-packets. In Studies in Turbulence, pp. 489-513, edited by T.B. Gatski, S. Sarkar & C.G. Speziale, Springer-Verlag, 1991 (with L. Zubair & M.V. Wickerhauser)

Remarks on high-Reynolds-number turbulence experiments and facilities. In High Reynolds Number Flows using Liquid and Gaseous Helium, pp. 181-184, edited by R.J. Donnelly. Springer-Verlag, 1991

Turbulent flows and coupled maps. In Spontaneous Formation of Space-Time Structures and Criticality, pp. 425-431, edited by T. Riste & D. Sherrington. (NATO ASI series). Kluwer Academic Publications, 1991

What is the matter with high-Reynolds-number turbulence? unpublished

1990

The measurement and interpretation of fractal dimensions of the scalar interface in turbulent flows. Phys. Fluids A 2, 792-807, 1990 (with R.R. Prasad)

Joint multifractal measures: Theory and applications to turbulence. Phys. Rev. A 41, 894-913, 1990 (with C. Meneveau, P. Kailasnath & M.S. Fan)

Interface dimension in intermittent turbulence. Phys. Rev. A 41, 2246-2248, 1990 (with C. Meneveau)

Quantitative three-dimensional imaging and the structure of passive scalar fields in fully turbulent flows. J. Fluid Mech. 216, 1-34, 1990 (with R.R. Prasad)

On the formation and suppression of vortex 'shedding' at low Reynolds numbers. J. Fluid Mech. 218, 71-107, 1990 (with P.J. Strykowski)

Some results concerning the 'dynamical systems approach' to the 'turbulence problem'. In Chaos: Soviet-American Perspectives in Nonlinear Science, pp. 223-242, edited by D.K. Campbell. American Institute of Physics, 1990.

Also, in a slightly different form entitled: The utility of dynamical systems approaches: Comment 3. In Whither Turbulence? Turbulence at the Cross Roads, pp. 269-291, edited by J.L. Lumley. (Lecture notes in physics, v.357) Springer, 1990

Wavelet analysis of the turbulent jet. Phys. Lett. A 145, 314-322, 1990 (with R. Everson & L. Sirovich)

Turbulence and the tube. Nature 344, 192-193, 1990

1989

The fractal geometry of interfaces and the multifractal distribution of dissipation in fully turbulent flows. Pure Appl. Geophys. 131, 43-60, 1989 (with R.R. Prasad, C. Meneveau & R. Ramshankar)

Mixing, entrainment and fractal dimensions of surfaces in turbulent flows. Proc. Roy. Soc. Lond. 421A, 79-108, 1989 (with R. Ramshankar & C. Meneveau)

Scalar interfaces in digital images of turbulent flows. Experiments in Fluids 7, 259-264, 1989 (with R.R. Prasad)

New results on the fractal and multifractal structure of the large Schmidt number passive scalars in fully turbulent flows. Physica D 38, 322-329, 1989 (with R.R. Prasad)

Absolute instability in variable density round jets. Experiments in Fluids 7, 309-317, 1989 (with S. Raghu & D. Kyle)

The turbulent boundary layer. In Frontiers in Experimental Fluid Mechanics, pp. 159-209, edited by M. Gad-el-Hak, Springer, 1989

Measurement of *f(a)* from scaling of histograms, and applications to dynamical systems and fully developed turbulence. Phys. Lett. A 137, 103-112, 1989 (with C. Meneveau)

Extraction of underlying multiplicative processes from multifractals via the thermodynamic formalism. Phys. Rev. A 40, 4593-4611, 1989 (with A. B. Chhabra & R.V. Jensen)

Direct determination of the *f(a)* singularity spectrum and its application to fully developed turbulence. Phys. Rev. A 40, 5284-5294, 1989 (with A.B. Chhabra, C. Meneveau & R.V. Jensen)

The fractal facets of turbulence. (In Japanese) J. Soc. Heating, Air Conditioning and Sanitary Engineers of Japan 64, 65-74, 1989. (with C. Meneveau) English original J. Fluid Mech. 173, 357-386, 1986

Three-dimensional imaging of turbulent flows. In Proc. Seventh Symposium on Turbulent Shear Flows, Stanford, CA. 1989. (with R.R. Prasad)

1988

A paradox concerning the extended Stokes series solution for the pressure drop in coiled pipes. Phys. Fluids 31, 1339-1347, 1988 (with R. Ramshankar)

Fractal facets of axisymmetric water jets. Phys. Fluids 31 (Special Section: Gallery of Fluid Motion), 2393-2394, 1988 (with R.R. Prasad)

The fractal dimension of scalar surfaces in turbulent jets. Fluid Dynamics Transactions of the Polish Academy of Sciences 14, 205-219, 1988 (with R.R. Prasad)

Nonlinear dynamics of the wake of an oscillating cylinder. Phys. Rev. Lett. 60, 797-800, 1988; (with D.J. Olinger); reprinted in Chaos II, pp. 493-496, edited by Hao Bai-Lin. World-Scientific, 1990

Multifractal nature of the dissipation field of passive scalars in fully turbulent flows. Phys. Rev. Lett. 61, 74-77, 1988 (with R.R. Prasad & C. Meneveau)

Flat plate drag reduction by turbulence mananipulation. Proc. Ind. Acad. Sci., Series C (Sadhana) 12, 15-30, 1988 (with R. Narasimha)

Singularities of the equations of fluid motion. Phys. Rev. A 38, 6287-6295, 1988 (with C. Meneveau)

Universal dynamics in the wake of an oscillating cylinder at low Reynolds numbers. In Proc. Int. Symp. on Flow Induced Vibrations and Noise: Nonlinear Interaction Effects and Chaotic Motions, pp. 1-29, edited by M. Reischman, M. Paidoussis & R. Hansen. ASME, New York, 1988 (with D.J. Olinger)

1987

The multifractal spectrum of the dissipation field in turbulent flows. In Physics of Chaos and Systems Far from Equilibrium, edited by Minh Doung Van. Nucl. Phys. B. (Proc. Suppl.) 2, 49-76, 1987 (with C. Meneveau)

A simple multifractal cascade model for fully developed turbulence. Phys. Rev. Lett. 59, 1424-1427, 1987 (with C. Meneveau)

Hopf bifurcation, Landau equation, and vortex shedding behind circular cylinders. In Forum on Unsteady Flow Separation, Trans. ASME, pp. 1-13, ed. by K.N. Ghia, 1987 (with P.J. Strykowski & D.J. Olinger)

Extended version entitled: On the Hopf bifurcation and Landau-Stuart constants associated with vortex ‘shedding’ behind circular cylinders. unpublished

A unified view of the origin and morphology of the turbulent boundary layer structure. In Turbulence Management and Relaminarization, pp. 37-61, edited by H.W. Liepmann & R. Narasimha. Springer-Verlag, 1987

Control of acoustically coupled combustion and fluid dynamic instabilities. AIAA Paper- 87-2690, 1987 (with S. Raghu)

1986

Chaos in open flow systems. In Dimensions and Entropies in Chaotic Systems, pp. 222-230, edited by G. Mayer-Kress, (Springer series in synergetics v.32). Springer-Verlag, 1986

The fractal facets of turbulence. J. Fluid Mech. 173, 357-386, 1986 (with C. Meneveau); also translated into Japanese: J. Soc. Heating, Air Conditioning and Sanitary Engineers of Japan 64, 65-74,1989

Transition intermittency in open flows, and intermittency routes to chaos. Physica D 23, 246-258, 1986 (with R. Ramshankar)

1985

On the fine-scale intermittency of turbulence. J. Fluid Mech. 151, 81-103, 1985

The effect of contraction on a homogeneous turbulent shear flows. J. Fluid Mech. 154, 187-213, 1985

The control of pressure oscillations in combustion and fluid dynamical systems. AIAA Paper-85-0540, 1985 (with B.T. Chu & S. Raghu)

The control of transitional flows. AIAA Paper-85-0559, 1985 (with P.J. Strykowski)

Transitional and turbulent wakes and chaotic dynamical systems. In Nonlinear Dynamics of Transcritical Flows, pp. 59-80, edited by H.L. Jordan, H. Oertel and K. Robert. (Lecture Notes in Engineering, v.13) Springer-Verlag, 1985

Transition and turbulence in fluid flows and low-dimensional chaos. In Frontiers in Fluid Mechanics, pp. 41-67, edited by S.H. Davis & J.L. Lumley. Springer-Verlag, 1985

1984

On the variation of the turbulent Prandtl number is shear flows. Int. Commun. Heat Mass Transf. 11, 497-501, 1984 (with R.A. Antonia & A.J. Chambers)

The azimuthal correlations of velocity and temperature fluctuations in an axisymmetric jet. Phys. Fluids 27, 867-875, 1984

On the scaling of the turbulence energy dissipation rate. Phys. Fluids 27, 1048-1051, 1984

On analogies between turbulence in open flows and chaotic dynamical systems. In Turbulence and Chaotic Phenomena in Fluids, pp. 191-196, edited by Tomomasa Tatsumi. Elsevier 1984 (with P.J. Strykowski)

1983

Stabilization effects in flow through helically coiled pipes. Experiments in Fluids 1, 31-36, 1983 (with P.J. Strykowski)

An instability associated with a sudden expansion in a pipe flow. Phys. Fluids 26, 2766-2768, 1983 (with P.J. Strykowski)

Zero-crossings in turbulent signals. J. Fluid Mech. 137, 251-272, 1983 (with A. Prabhu & R. Narasimha)

Some studies on non-simple pipe flows. Trans. Inst. Engineers, Australia ME8, 200-208, 1983 Also in Proc. Eighth Australasian Fluid Mech. Conf., 1983

Book review: An introduction to error analysis: The study of uncertainties in physical measurements, by J.R. Taylor American Scientist 71, 430-430, 1983.

1982

Laminarescent, relaminarizing and retransitional flows. Acta Mechanica 44, 1-48, 1982

Equilibrium parameters for two-dimensional turbulent wakes. J. Fluids Engg. Trans. ASME 104, 167-170, 1982 (with R. Narasimha)

A test of gradient transport and its generalizations. In Turbulent Shear Flows 3; selected papers from the 3rd international symposium, pp. 96-112, edited by L.J.S. Bradbury, F. Durst, B.E. Launder, F.W. Schmidt & J.H. Whitelaw. Springer-Verlag, 1982 (with S. Tavoularis & S. Corrsin)

Expanded form of the article entitled: Turbulent transport in passively heated homogeneous and inhomogeneous flows.

Statistics of turbulence research. APS Division of Fluid Dynamics Newsletter 1982 (4 pages)

1981

Turbulent transport in passively heated homogeneous and inhomogeneous flows. In Proc. Third Symposium on Turbulent Shear Flows, Davis, CA. 1981 (with S. Tavoularis & S. Corrsin)

Also in expanded form entitled: A test of gradient transport and its generalizations.

Skewness of the temperature derivative in an asymmetrically heated wake. Phys. Fluids 24, 778-779, 1981 (with S. Tavoularis)

Evolution of the centerline probability density function of temperature in a plane turbulent wake. Phys. Fluids 24, 1232-1234, 1981

Decay of scalar variance in isotropic turbulence. Phys. Fluids 24, 1909-1910, 1981

Approach to self-preservation in plane turbulent wakes. AIAA J. 19, 1365-1367, 1981

The effect of cooling rate on binary nucleation. Appl. Sci. Res. 37, 183-194, 1981 (with P.P. Wegener)

1980

Temperature fluctuations and scales in grid-generated turbulence. J. Fluid Mech. 100, 597-621, 1980 (with S. Tavoularis, R. Henry & S. Corrsin)

On the skewness of the temperature derivative in turbulent flows. J. Fluid Mech. 101, 783-795, 1980 (with S. Tavoularis)

1979

Relaminarization of fluid flows. Adv. Appl. Mech. 19, 221-309, 1979 (with R. Narasimha)

Local isotropy and large structures in a heated turbulent jet. J. Fluid Mech. 94, 745-775, 1979 (with R.A. Antonia & D. Britz)

Response of atmospheric surface layer turbulence to a partial solar eclipse. J. Geophys. Res. 84, 1689-1692, 1979 (with R.A. Antonia, A.J. Chambers, D. Phong-Anant & S. Rajagopalan)

1978

Rapid distortion of axisymmetric turbulence. J. Fluid Mech. 84, 497-516, 1978 (with R. Narasimha)

Measurements of turbulent fluxes in Bass-Strait. J. Phys. Ocean. 8, 28-37, 1978 (with R.A. Antonia, A.J. Chambers, S. Rajagopalan & C.A. Friehe)

Structure of turbulent bulges in an axisymmetric jet. In Structure and Mechanisms of Turbulence, vol. 1. pp. 19-30, (Lecture Notes in Physics, v.75) Springer-Verlag, 1978 (with R.A. Antonia & D. Britz)

Joint probability densities and quadrant contributions in a heated turbulent round jet. AIAA J. 16, 867-868, 1978 (with R.A. Antonia)

Conditional measurements in a heated axisymmetric turbulent mixing layer. AIAA J. 16, 869-870, 1978 (with R.A. Antonia & S.E. Stephenson)

Accuracy of moments of velocity and scalar fluctuations in the atmospheric surface layer. Boundary-Layer Meteorology 14, 341-359, 1978 (with A.J. Chambers & R.A. Antonia)

1977

Conditional probability densities in a turbulent heated round jet. In Proc. Sixth Australasian Hydraulics and Fluid Mechanics Conference, Adelaide, Australia, 5-9 Dec. 1977, pp. 411-414. Sydney, The Institution of Engineers, Australia, 1977 (with R.A. Antonia)

Temperature dissipation fluctuations in a turbulent boundary layer. Phys. Fluids 20, 1238-1249, 1977 (with R.A. Antonia & H.Q. Danh)

Log-normality of temperature dissipation in a turbulent boundary layer. Phys. Fluids 20, 1800-1804, 1977 (with R.A. Antonia)

Skewness of temperature derivatives in a turbulent boundary layer. Phys. Fluids 20, 1986-1988, 1977 (with R.A. Antonia)

Properties of wall shear stress fluctuations in a turbulent duct flow. J. Appl. Mech. Trans. ASME Ser. E 44, 389-395, 1977 (with R.A. Antonia)

1976

Determination of intermittency from the probability density function of a passive scalar. Phys. Fluids 19, 1471-1474, 1976 (with R.W. Bilger & R.A. Antonia)

Diffusion from a heated wall-cylinder immersed in a turbulent boundary layer. In Proc. Thermofluids Conference, Hobart, Australia, Dec. 1-3, 1976, pp. 103-106,

Sydney, The Institution of Engineers, Australia, 1976 (with H.Q. Danh & R.A. Antonia)

1974

Distorted wakes. Adv. Geophys. 18B, 317-328, 1974 (with A. Prabhu & R. Narasimha)

Rapid distortion of shear flows. Aero. Soc. of India Silver Jubilee Tech. Conf., Bangalore, 1974. Paper 2.3 (with R. Narasimha)

1973

Relaminarization in highly accelerated turbulent boundary layers. J. Fluid Mech. 61, 417-447 1973 (with R. Narasimha)

Rapid distortion of axisymmetric turbulence. Current Science 42, 632-634, 1973

B. Books and Special Journal Issues

- Experimental Heat Transfer, Fluid Mechanics and Thermodynamics, volumes 1 and 2, Elsevier, 1993 (Proceedings of the Third World-Conference), with R.K. Shah and Y. Joshi
- Developments in Fluid Dynamics and Aerospace Engineering, Interline, 1995 (conference proceedings), with S.M. Deshpande, A. Prabhu and P.R. Viswanath
- Two issues of Pramana: Journal of Physics, on Nonlinearity and Chaos in the Physical Sciences, Indian Academy of Science, 1997, with R. Ramaswamy
- Flow at Ultra-High Reynolds and Rayleigh Numbers: A Status Report, Springer, 1998, with R.J. Donnelly
- Perspectives and Problems in Nonlinear Physics, Springer, 2003, with E. Kaplan and J.E. Marsden
- Two issues of Flow, Turbulence and Combustion: Special Issues in Honor of Professor R.A. Antonia, pp. 91-492, 2004 (with R.W. Bilger)
- 100 Reasons to be a Scientist, The Abdus Salam International Centre for Theoretical Physics, 2004 (translated into Chinese, Marati, Portuguese, Italian, Bengali, etc.)
- One Hundred Years of Boundary Layer Research, Solid Mechanics and its Applications, Springer, 2006 (with G.E.A. Meier and H.-J. Heinemann)
- ICTP and Africa, The Abdus Salam International Centre for Theoretical Physics, 2007
- The ICTP Experience: Diploma and Step Students, The Abdus Salam International Centre for Theoretical Physics, 2007

- The ICTP Experience: The TRIL Programme, The Abdus Salam International Centre for Theoretical Physics, 2007
- Collective Phenomena in Macroscopic Systems, Proceedings of the Conference Villa Olmo, Como, Italy 4 -6 December, 2006, World Scientific, 2007 (with G. Bertin, R. Pozzoli & M. Romé)
- ICTP and Latin America, The Abdus Salam International Centre for Theoretical Physics, 2007
- Frontiers of Fundamental and Computational Physics, Proceedings of the 9th International Symposium, held in Udine and Trieste, 7-9 Jan. 2008. (AIP conference proceedings, 1018). American Institute of Physics, 2008 (with B.G. Sidharth, F. Honsell, O. Mansutti and A. de Angelis)
- Special Issue on "Turbulence Mixing and Beyond", *Philosophical Transactions of the Royal Society A,* **368**, pp. 1537-1828, 201x? (with Snezhana Abarzhi)
- A Voyage Through Turbulence, Cambridge University Press, 434 pages, 2011 (with P.A. Davidson, Y. Kaneda and Keith Moffatt)
- Special Issue on "Small Scale Turbulence", volume 241 of Physica D, pp. 135-314, 2012 (with Daniela Tordella)
- Ten Chapters in Turbulence, Cambridge University Press (with P.A. Davidson and Y. Kaneda), 2013
- Advances in Computation, Modeling and Control of Transitional and Turbulent Flows, World Scientific (with T.K. Sengupta, S.K. Lele and P.A. Davidson), 2015