# Ke-Qing Xia

List of Publications by Year
in descending order

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|---|---|---|---|
| 130<br>papers | 5,946<br>citations | 53660<br>45<br>h-index | 79541<br>73<br>g-index |
| 130<br>all docs | 130<br>docs citations | 130<br>times ranked | 1495<br>citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | On the centrifugal effect in turbulent rotating thermal convection: onset and heat transport. Journal of Fluid Mechanics, 2022, 938, . | 1.4 | 6 |
| 2 | The effect of tidal force and topography on horizontal convection. Journal of Fluid Mechanics, 2022, 932, . | 1.4 | 0 |
| 3 | Exploring the plume and shear effects in turbulent Rayleighâ€“BÃ©nard convection with effective horizontal buoyancy under streamwise and spanwise geometrical confinements. Journal of Fluid Mechanics, 2022, 940, . | 1.4 | 5 |
| 4 | A laboratory study of internal gravity waves incident upon slopes with varying surface roughness. Journal of Fluid Mechanics, 2022, 942, . | 1.4 | 0 |
| 5 | On the effective horizontal buoyancy in turbulent thermal convection generated by cell tilting. Journal of Fluid Mechanics, 2021, 914, . | 1.4 | 16 |
| 6 | Lagrangian velocity and acceleration measurements in plume-rich regions of turbulent Rayleigh-BÃ©nard convection. Physical Review Fluids, 2021, 6, . | 1.0 | 4 |
| 7 | Heat-transport scaling and transition in geostrophic rotating convection with varying aspect ratio. Physical Review Fluids, 2021, 6, . | 1.0 | 18 |
| 8 | Inverse centrifugal effect induced by collective motion of vortices in rotating thermal convection. Nature Communications, 2021, 12, 5585. | 5.8 | 7 |
| 9 | A comparative study of linear and step forcing temperature profiles in horizontal convection <sup>(a)</sup>. Europhysics Letters, 2021, 135, 24006. | 0.7 | 0 |
| 10 | Centrifugal-Force-Induced Flow Bifurcations in Turbulent Thermal Convection. Physical Review Letters, 2021, 127, 244501. | 2.9 | 10 |
| 11 | Vortices as Brownian particles in turbulent flows. Science Advances, 2020, 6, eaaz1110. | 4.7 | 28 |
| 12 | Emergence of substructures inside the large-scale circulation induces transition in flow reversals in turbulent thermal convection. Journal of Fluid Mechanics, 2019, 877, . | 1.4 | 32 |
| 13 | Tuning heat transport via boundary layer topographies. Journal of Fluid Mechanics, 2019, 876, 1-4. | 1.4 | 3 |
| 14 | Moisture transfer by turbulent natural convection. Journal of Fluid Mechanics, 2019, 874, 1041-1056. | 1.4 | 7 |
| 15 | Universal fluctuations in the bulk of Rayleighâ€“BÃ©nard turbulence. Journal of Fluid Mechanics, 2019, 878, . | 1.4 | 12 |
| 16 | Quasistatic magnetoconvection: heat transport enhancement and boundary layer crossing. Journal of Fluid Mechanics, 2019, 870, 519-542. | 1.4 | 30 |
| 17 | Temperature Fluctuation Profiles in Turbulent Thermal Convection: A Logarithmic Dependence versus a Power-Law Dependence. Physical Review Letters, 2019, 122, 014503. | 2.9 | 20 |
| 18 | Contribution of Surface Thermal Forcing to Mixing in the Ocean. Journal of Geophysical Research: Oceans, 2018, 123, 855-863. | 1.0 | 10 |

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|---|---|---|---|
| 19 | Multiple-resolution scheme in finite-volume code for active or passive scalar turbulence. Journal of Computational Physics, 2018, 375, 1045-1058. | 1.9 | 17 |
| 20 | Flow Topology Transition via Global Bifurcation in Thermally Driven Turbulence. Physical Review Letters, 2018, 120, 214501. | 2.9 | 32 |
| 21 | Effect of Prandtl number on heat transport enhancement in Rayleigh-BÃ©nard convection under geometrical confinement. Physical Review Fluids, 2018, 3, . | 1.0 | 43 |
| 22 | Thermal convection with mixed thermal boundary conditions: effects of insulating lids at the top. Journal of Fluid Mechanics, 2017, 817, . | 1.4 | 19 |
| 23 | Turbulent thermal convection over rough plates with varying roughness geometries. Journal of Fluid Mechanics, 2017, 825, 573-599. | 1.4 | 58 |
| 24 | Confined Rayleigh-BÃ©nard, Rotating Rayleigh-BÃ©nard, and Double Diffusive Convection: A Unifying View on Turbulent Transport Enhancement through Coherent Structure Manipulation. Physical Review Letters, 2017, 119, 064501. | 2.9 | 67 |
| 25 | Higher-order flow modes in turbulent Rayleighâ€“BÃ©nard convection. Journal of Fluid Mechanics, 2016, 805, 31-51. | 1.4 | 37 |
| 26 | Exploring the severely confined regime in Rayleighâ€“BÃ©nard convection. Journal of Fluid Mechanics, 2016, 805, . | 1.4 | 37 |
| 27 | Effects of geometric confinement in quasi-2-D turbulent Rayleighâ€“BÃ©nard convection. Journal of Fluid Mechanics, 2016, 794, 639-654. | 1.4 | 42 |
| 28 | Laboratory simulation of the geothermal heating effects on ocean overturning circulation. Journal of Geophysical Research: Oceans, 2016, 121, 7589-7598. | 1.0 | 12 |
| 29 | Statistical characterization of thermal plumes in turbulent thermal convection. Physical Review Fluids, 2016, 1, . | 1.0 | 10 |
| 30 | Reversals of the large-scale circulation in quasi-2D Rayleighâ€“BÃ©nard convection. Journal of Fluid Mechanics, 2015, 778, . | 1.4 | 46 |
| 31 | Effects of polymer additives in the bulk of turbulent thermal convection. Journal of Fluid Mechanics, 2015, 784, . | 1.4 | 22 |
| 32 | Comparative Experimental Study of Fixed Temperature and Fixed Heat Flux Boundary Conditions in Turbulent Thermal Convection. Physical Review Letters, 2015, 115, 154502. | 2.9 | 31 |
| 33 | Condensation of Coherent Structures in Turbulent Flows. Physical Review Letters, 2015, 115, 264503. | 2.9 | 52 |
| 34 | Turbulent flow in the bulk of Rayleighâ€“BÃ©nard convection: aspect-ratio dependence of the small-scale properties. Journal of Fluid Mechanics, 2014, 747, 73-102. | 1.4 | 32 |
| 35 | Heat transport properties of plates with smooth and rough surfaces in turbulent thermal convection. Journal of Fluid Mechanics, 2014, 740, 28-46. | 1.4 | 49 |
| 36 | Confinement-Induced Heat-Transport Enhancement in Turbulent Thermal Convection. Physical Review Letters, 2013, 111, 104501. | 2.9 | 85 |

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| 37 | Dynamics and flow coupling in two-layer turbulent thermal convection. Journal of Fluid Mechanics, 2013, 728, . | 1.4 | 14 |
| 38 | Viscous boundary layer properties in turbulent thermal convection in a cylindrical cell: the effect of cell tilting. Journal of Fluid Mechanics, 2013, 720, 140-168. | 1.4 | 24 |
| 39 | Dynamics of the large-scale circulation in high-Prandtl-number turbulent thermal convection. Journal of Fluid Mechanics, 2013, 717, 322-346. | 1.4 | 22 |
| 40 | Turbulent flow in the bulk of Rayleighâ€“BÃ©nard convection: small-scale properties in a cubic cell. Journal of Fluid Mechanics, 2013, 722, 596-617. | 1.4 | 65 |
| 41 | Thermal boundary layer structure in turbulent Rayleighâ€“BÃ©nard convection in a rectangular cell. Journal of Fluid Mechanics, 2013, 721, 199-224. | 1.4 | 57 |
| 42 | Experimental investigation of pair dispersion with small initial separation in convective turbulent flows. Physical Review E, 2013, 87, 063006. | 0.8 | 17 |
| 43 | Kolmogorov constants for the second-order structure function and the energy spectrum. Physical Review E, 2013, 87, 023002. | 0.8 | 12 |
| 44 | Current trends and future directions in turbulent thermal convection. Theoretical and Applied Mechanics Letters, 2013, 3, 052001. | 1.3 | 126 |
| 45 | Lagrangian acceleration measurements in convective thermal turbulence. Journal of Fluid Mechanics, 2012, 692, 395-419. | 1.4 | 48 |
| 46 | Enhanced and reduced heat transport in turbulent thermal convection with polymer additives. Physical Review E, 2012, 86, 016325. | 0.8 | 21 |
| 47 | Thermal boundary layer profiles in turbulent Rayleigh-BÃ©nard convection in a cylindrical sample. Physical Review E, 2012, 85, 027301. | 0.8 | 36 |
| 48 | Disentangle plume-induced anisotropy in the velocity field in buoyancy-driven turbulence. Journal of Fluid Mechanics, 2011, 684, 192-203. | 1.4 | 12 |
| 49 | Local Dissipation Scales and Integral-Scale Reynolds Number Scalings in Thermally-Driven Turbulence. Journal of Physics: Conference Series, 2011, 318, 042016. | 0.3 | 1 |
| 50 | How heat transfer efficiencies in turbulent thermal convection depend on internal flow modes. Journal of Fluid Mechanics, 2011, 676, 1-4. | 1.4 | 13 |
| 51 | An experimental investigation of turbulent thermal convection in water-based alumina nanofluid. Physics of Fluids, 2011, 23, . | 1.6 | 38 |
| 52 | Local Energy Dissipation Rate Balances Local Heat Flux in the Center of Turbulent Thermal Convection. Physical Review Letters, 2011, 107, 174503. | 2.9 | 37 |
| 53 | Analysis of the large-scale circulation and the boundary layers in turbulent Rayleigh-BÃ©nard convection. ERCOFTAC Series, 2011, , 383-388. | 0.1 | 8 |
| 54 | Horizontal structures of velocity and temperature boundary layers in two-dimensional numerical turbulent Rayleigh-BÃ©nard convection. Physics of Fluids, 2011, 23, 125104. | 1.6 | 36 |

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| 55 | Prandtlâ€“Blasius temperature and velocity boundary-layer profiles in turbulent Rayleighâ€“BÃ©nard convection. Journal of Fluid Mechanics, 2010, 664, 297-312. | 1.4 | 64 |
| 56 | Flow Reversals in Thermally Driven Turbulence. Physical Review Letters, 2010, 105, 034503. | 2.9 | 165 |
| 57 | Measured Instantaneous Viscous Boundary Layer in Turbulent Rayleigh-BÃ©nard Convection. Physical Review Letters, 2010, 104, 104301. | 2.9 | 75 |
| 58 | Universality of Local Dissipation Scales in Buoyancy-Driven Turbulence. Physical Review Letters, 2010, 104, 124301. | 2.9 | 23 |
| 59 | The mixing evolution and geometric properties of a passive scalar field in turbulent Rayleighâ€“BÃ©nard convection. New Journal of Physics, 2010, 12, 083029. | 1.2 | 7 |
| 60 | Small-Scale Properties of Turbulent Rayleigh-BÃ©nard Convection. Annual Review of Fluid Mechanics, 2010, 42, 335-364. | 10.8 | 683 |
| 61 | Physical and geometrical properties of thermal plumes in turbulent Rayleighâ€“BÃ©nard convection. New Journal of Physics, 2010, 12, 075006. | 1.2 | 48 |
| 62 | Origin of the Temperature Oscillation in Turbulent Thermal Convection. Physical Review Letters, 2009, 102, 044503. | 2.9 | 112 |
| 63 | Oscillations of the large-scale circulation in turbulent Rayleighâ€“BÃ©nard convection: the sloshing mode and its relationship with the torsional mode. Journal of Fluid Mechanics, 2009, 630, 367-390. | 1.4 | 74 |
| 64 | Experimental Studies of Turbulent Rayleigh-BÃ©nard Convection. Springer Proceedings in Physics, 2009, , 471-478. | 0.1 | 0 |
| 65 | Flow mode transitions in turbulent thermal convection. Physics of Fluids, 2008, 20, . | 1.6 | 108 |
| 66 | Comparative experimental study of local mixing of active and passive scalars in turbulent thermal convection. Physical Review E, 2008, 77, 056312. | 0.8 | 23 |
| 67 | Scaling of the Local Convective Heat Flux in Turbulent Rayleigh-BÃ©nard Convection. Physical Review Letters, 2008, 100, 244503. | 2.9 | 50 |
| 68 | Azimuthal motion, reorientation, cessation, and reversal of the large-scale circulation in turbulent thermal convection: A comparative study in aspect ratio one and one-half geometries. Physical Review E, 2008, 78, 036326. | 0.8 | 50 |
| 69 | Experimental investigation of homogeneity, isotropy, and circulation of the velocity field in buoyancy-driven turbulence. Journal of Fluid Mechanics, 2008, 598, 361-372. | 1.4 | 42 |
| 70 | Experimental studies of the viscous boundary layer properties in turbulent Rayleighâ€“BÃ©nard convection. Journal of Fluid Mechanics, 2008, 605, 79-113. | 1.4 | 90 |
| 71 | An experimental study of kicked thermal turbulence. Journal of Fluid Mechanics, 2008, 606, 133-151. | 1.4 | 18 |
| 72 | Measured Thermal Dissipation Field in Turbulent Rayleigh-BÃ©nard Convection. Physical Review Letters, 2007, 98, 144501. | 2.9 | 26 |

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| 73 | Morphological Evolution of Thermal Plumes in Turbulent Rayleigh-BÃ©nard Convection. Physical Review Letters, 2007, 98, 074501. | 2.9 | 92 |
| 74 | Cessations and reversals of the large-scale circulation in turbulent thermal convection. Physical Review E, 2007, 75, 066307. | 0.8 | 81 |
| 75 | Two clocks for a single engine in turbulent convection. Journal of Statistical Mechanics: Theory and Experiment, 2007, 2007, N11001-N11001. | 0.9 | 7 |
| 76 | Measured oscillations of the velocity and temperature fields in turbulent Rayleigh-BÃ©nard convection in a rectangular cell. Physical Review E, 2007, 76, 036301. | 0.8 | 21 |
| 77 | Multi-point local temperature measurements inside the conducting plates in turbulent thermal convection. Journal of Fluid Mechanics, 2007, 570, 479-489. | 1.4 | 11 |
| 78 | Cascades of Velocity and Temperature Fluctuations in Buoyancy-Driven Thermal Turbulence. Physical Review Letters, 2006, 97, 144504. | 2.9 | 73 |
| 79 | Azimuthal motion of the mean wind in turbulent thermal convection. Physical Review E, 2006, 73, 056312. | 0.8 | 84 |
| 80 | Statistics and Scaling of the Velocity Field in Turbulent Thermal Convection. , 2005, , 163-170. | | 2 |
| 81 | Azimuthal Symmetry, Flow Dynamics, and Heat Transport in Turbulent Thermal Convection in a Cylinder with an Aspect Ratio of 0.5. Physical Review Letters, 2005, 95, 074502. | 2.9 | 96 |
| 82 | Density Fluctuations in Strongly Stratified Two-Dimensional Turbulence. Physical Review Letters, 2005, 94, 174503. | 2.9 | 22 |
| 83 | Test of steady-state fluctuation theorem in turbulent Rayleigh-BÃ©nard convection. Physical Review E, 2005, 72, 015301. | 0.8 | 41 |
| 84 | Three-dimensional flow structures and dynamics of turbulent thermal convection in a cylindrical cell. Physical Review E, 2005, 72, 026302. | 0.8 | 115 |
| 85 | Experimental study of velocity boundary layer near a rough conducting surface in turbulent natural convection. Journal of Turbulence, 2005, 6, N30. | 0.5 | 43 |
| 86 | Scaling of the Reynolds number in turbulent thermal convection. Physical Review E, 2005, 72, 067302. | 0.8 | 45 |
| 87 | Heat transport by turbulent Rayleighâ€“BÃ©nard convection in 1 m diameter cylindrical cells of widely varying aspect ratio. Journal of Fluid Mechanics, 2005, 542, 165. | 1.4 | 86 |
| 88 | Measurements of the local convective heat flux in turbulent Rayleigh-BÃ©nard convection. Physical Review E, 2004, 70, 026308. | 0.8 | 58 |
| 89 | Extraction of Plumes in Turbulent Thermal Convection. Physical Review Letters, 2004, 93, 124501. | 2.9 | 39 |
| 90 | From laminar plumes to organized flows: the onset of large-scale circulation in turbulent thermal convection. Journal of Fluid Mechanics, 2004, 503, 47-56. | 1.4 | 190 |

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| 91 | Velocity and temperature cross-scaling in turbulent thermal convection. Journal of Turbulence, 2004, 5, . | 0.5 | 12 |
| 92 | Velocity oscillations in turbulent Rayleighâ€“BÃ©nard convection. Physics of Fluids, 2004, 16, 412-423. | 1.6 | 71 |
| 93 | Spatial variations of the mean and statistical quantities in the thermal boundary layers of turbulent convection. European Physical Journal B, 2003, 32, 127-136. | 0.6 | 28 |
| 94 | Measured Local Heat Transport in Turbulent Rayleigh-BÃ©nard Convection. Physical Review Letters, 2003, 90, 074501. | 2.9 | 117 |
| 95 | Particle image velocimetry measurement of the velocity field in turbulent thermal convection. Physical Review E, 2003, 68, 066303. | 0.8 | 120 |
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| 97 | Heat-Flux Measurement in High-Prandtl-Number Turbulent Rayleigh-BÃ©nard Convection. Physical Review Letters, 2002, 88, 064501. | 2.9 | 119 |
| 98 | Prandtl number dependence of the viscous boundary layer and the Reynolds numbers in Rayleigh-BÃ©nard convection. Physical Review E, 2002, 65, 066306. | 0.8 | 76 |
| 99 | Turbidity measurements and amplitude scaling of critical solutions of polystyrene in methylcyclohexane. Journal of Chemical Physics, 2002, 117, 4557-4563. | 1.2 | 9 |
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| 101 | Extended self similarity of passive scalar in Rayleigh-BÃ©nard convection flow based on wavelet transform. Applied Mathematics and Mechanics (English Edition), 2002, 23, 804-810. | 1.9 | 0 |
| 102 | Scaling of the velocity power spectra in turbulent thermal convection. Physical Review E, 2001, 64, 065301. | 0.8 | 59 |
| 103 | Effect of Additives on Self-Assembling Behavior of Nafion in Aqueous Media. Macromolecules, 2001, 34, 7783-7788. | 2.2 | 63 |
| 104 | Scaling Properties of the Temperature Field in Convective Turbulence. Physical Review Letters, 2001, 87, 064501. | 2.9 | 55 |
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| 108 | Probing the viscous boundary layer by measuring temperature fluctuations in turbulent Rayleigh-Bèınard convection. AIP Conference Proceedings, 2000, , . | 0.3 | 0 |

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| 109 | Turbulent convection with "disconnectedâ€•top and bottom boundary layers. Europhysics Letters, 1999, 46, 171-176. | 0.7 | 9 |
| 110 | Correlation length and amplitude scaling in critical polymer solutions. Journal of Chemical Physics, 1999, 111, 8298-8301. | 1.2 | 12 |
| 111 | Spatial structure of the viscous boundary layer in turbulent convection. Physical Review E, 1998, 58, 5816-5820. | 0.8 | 31 |
| 112 | Viscous boundary layers at the sidewall of a convection cell. Physical Review E, 1998, 58, 486-491. | 0.8 | 59 |
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| 114 | Turbulent Thermal Convection with an Obstructed Sidewall. Physical Review Letters, 1997, 79, 5006-5009. | 2.9 | 44 |
| 115 | Boundary layer length scales in convective turbulence. Physical Review E, 1997, 56, 3010-3015. | 0.8 | 48 |
| 116 | Interactions in mixtures of a microemulsion and a polymer. Physical Review E, 1997, 55, 5792-5795. | 0.8 | 20 |
| 117 | Turbidity of critical solutions of polymethylmethacrylate in 3-octanone. Journal of Chemical Physics, 1997, 107, 2060-2065. | 1.2 | 12 |
| 118 | Turbulent Convection over Rough Surfaces. Physical Review Letters, 1996, 76, 908-911. | 2.9 | 98 |
| 119 | Measured Velocity Boundary Layers in Turbulent Convection. Physical Review Letters, 1996, 77, 1266-1269. | 2.9 | 66 |
| 120 | Measured coexistence curves of phaseâ€•separated polymer solutions. Journal of Chemical Physics, 1996, 105, 6018-6025. | 1.2 | 34 |
| 121 | Measured Local-Velocity Fluctuations in Turbulent Convection. Physical Review Letters, 1995, 75, 437-440. | 2.9 | 25 |
| 122 | Experimental Study of the Spectral Distribution of the Light Scattered from Flexible Macromolecules in Very Dilute Solution. Macromolecules, 1995, 28, 1032-1037. | 2.2 | 41 |
| 123 | Dual-beam incoherent cross-correlation spectroscopy. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 1995, 12, 1571. | 0.8 | 35 |
| 124 | Incorporation of a differential refractometer into a laser lightâ€•scattering spectrometer. Review of Scientific Instruments, 1994, 65, 587-590. | 0.6 | 119 |
| 125 | Incoherent crossâ€•correlation spectroscopy. Journal of Chemical Physics, 1993, 98, 9256-9265. | 1.2 | 18 |
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| 128 | Radiation pressure induced gratings in colloidal suspensions: Dynamics of formation and decay. Journal of Chemical Physics, 1989, 91, 1351-1356. | 1.2 | 5 |
| 129 | Dynamic light scattering from binary-liquid gels. Physical Review A, 1988, 37, 3626-3629. | 1.0 | 20 |
| 130 | Light scattering from a binary-liquid entanglement gel. Physical Review A, 1987, 36, 2432-2439. | 1.0 | 19 |