Chaoqun Liu

List of Publications by Year
in descending order

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150	4,199	147726	128225
papers	citations	31 h-index	60 g-index

156	156	156	864
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Proper Orthogonal Decomposition Analysis of Coherent Structure in a Turbulent Flow after a Micro-vortex Generator. Applied Mathematical Modelling, 2022, 104, 140-162.	2.2	2
2	Liutex-Core-Tubes for Vortex Structure. , 2022, , .		1
3	Introduction of Liutex and Third Generation of Vortex Identification Methods. , 2022, , .		3
4	Investigation of vortex motion mechanism of synthetic jet in a cross flow. AIP Advances, 2022, 12, 035045.	0.6	1
5	Correlation between vorticity, Liutex and shear in boundary layer transition. Computers and Fluids, 2022, 238, 105371.	1.3	6
6	Liutex based new fluid kinematics. Journal of Hydrodynamics, 2022, 34, 355-371.	1.3	15
7	Analysis of Difference Between Liutex and Î»ci. , 2021, , 183-197.		0
8	Micro-Ramp Wake Structures Identified by Liutex. , 2021, , 279-288.		0
9	Dimensional and Theoretical Analysis of Second-Generation Vortex Identification Methods. , 2021, , 57-70.		2
10	Mathematical Study on Local Fluid Rotation Axis: Vorticity is Not the Rotation Axis. , 2021, , 71-84.		0
11	Liutex and Third Generation of Vortex Identification Methods. , 2021, , 3-36.		3
12	Stretching and shearing contamination analysis for Liutex and other vortex identification methods. Advances in Aerodynamics, 2021, 3, .	1.3	19
13	New fluid kinematics. Journal of Hydrodynamics, 2021, 33, 395-399.	1.3	5
14	New ideas on governing equations of fluid dynamics. Journal of Hydrodynamics, 2021, 33, 861-866.	1.3	12
15	Investigation of correlation between vorticity, Q, <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.svg"><mml:msub><mml:mi>Î»</mml:mi><mml:mrow><mml:mi>c</mml:mi><mml:mi>i</mml:mi></mml:mrow></mml:msub></mml:math>, <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si2.svg"><mml:msub><mml:mi>Î»</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:math>, <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si3.svg"><mml:mstyle mathvard	1.3	16
16	Liutex and Proper Orthogonal Decomposition for Coherence Structure in the Wake of Micro Vortex Generator. , 2021, , 227-238.		0
17	New governing equations for fluid dynamics. AIP Advances, 2021, 11, .	0.6	7
18	POD analysis on vortical structures in MVG wake by Liutex core line identification. Journal of Hydrodynamics, 2020, 32, 497-509.	1.3	15

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19	Correlation analysis among vorticity, Q method and Liutex. Journal of Hydrodynamics, 2020, 32, 1207-1211.	1.3	9
20	Liutex theoretical system and six core elements of vortex identification. Journal of Hydrodynamics, 2020, 32, 197-211.	1.3	44
21	Prediction of the precessing vortex core in the Francis-99 draft tube under off-design conditions by using Liutex/Rortex method. Journal of Hydrodynamics, 2020, 32, 623-628.	1.3	14
22	Principal coordinates and principal velocity gradient tensor decomposition. Journal of Hydrodynamics, 2020, 32, 441-453.	1.3	18
23	Liutex core line and POD analysis on hairpin vortex formation in natural flow transition. Journal of Hydrodynamics, 2020, 32, 1109-1121.	1.3	13
24	An objective version of the Rortex vector for vortex identification. Physics of Fluids, 2019, 31, .	1.6	46
25	Liutex (vortex) core definition and automatic identification for turbulence vortex structures. Journal of Hydrodynamics, 2019, 31, 857-863.	1.3	45
26	Modified normalized Rortex/vortex identification method. Physics of Fluids, 2019, 31, .	1.6	94
27	Explicit expressions for Rortex tensor and velocity gradient tensor decomposition. Physics of Fluids, 2019, 31, 081704.	1.6	29
28	An explicit expression for the calculation of the Rortex vector. Physics of Fluids, 2019, 31, .	1.6	26
29	Rortex based velocity gradient tensor decomposition. Physics of Fluids, 2019, 31, .	1.6	50
30	New normalized Rortex/vortex identification method. Physics of Fluids, 2019, 31, .	1.6	128
31	Mathematical foundation of turbulence generationâ€"From symmetric to asymmetric Liutex. Journal of Hydrodynamics, 2019, 31, 632-636.	1.3	10
32	A Liutex based definition and identification of vortex core center lines. Journal of Hydrodynamics, 2019, 31, 445-454.	1.3	68
33	Galilean invariance of Omega vortex identification method. Journal of Hydrodynamics, 2019, 31, 249-255.	1.3	38
34	Comparisons and analyses of vortex identification between Omega method and Q criterion. Journal of Hydrodynamics, 2019, 31, 224-230.	1.3	44
35	Objective Omega vortex identification method. Journal of Hydrodynamics, 2019, 31, 455-463.	1.3	39
36	Explicit formula for the Liutex vector and physical meaning of vorticity based on the Liutex-Shear decomposition. Journal of Hydrodynamics, 2019, 31, 464-474.	1.3	116

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37	Third generation of vortex identification methods: Omega and Liutex/Rortex based systems. Journal of Hydrodynamics, 2019, 31, 205-223.	1.3	291
38	Liutex (vorex) cores in transitional boundary layer with spanwise-wall oscillation. Journal of Hydrodynamics, 2019, 31, 1178-1189.	1.3	8
39	Liutex similarity in turbulent boundary layer. Journal of Hydrodynamics, 2019, 31, 1259-1262.	1.3	25
40	POD Study on vortex Structures in MVG wake. , 2019, , .		2
41	POD Analysis of Losing Symmetry in Late Flow Transition. , 2019, , .		2
42	DNS study on large vortex ring formation in late flow transition. , 2018, , .		1
43	POD Analyses on Vortex Structure in Late-stage Transition. , 2018, , .		3
44	LES Study on Structure Characteristics of Shock/Vortex Ring Interaction. , 2018, , .		0
45	Frequency Investigation on Unsteadiness of Shock-Vortex Ring Interaction. , 2018, , .		0
46	Spectrum study on unsteadiness of shock waveâ€“vortex ring interaction. Physics of Fluids, 2018, 30, .	1.6	19
47	Correlation analysis on volume vorticity and vortex in late boundary layer transition. Physics of Fluids, 2018, 30, .	1.6	34
48	Rortexâ€”A new vortex vector definition and vorticity tensor and vector decompositions. Physics of Fluids, 2018, 30, .	1.6	330
49	Letter: Galilean invariance of Rortex. Physics of Fluids, 2018, 30, .	1.6	69
50	A selected review of vortex identification methods with applications. Journal of Hydrodynamics, 2018, 30, 767-779.	1.3	89
51	Study on vorticity structures in late flow transition. Physics of Fluids, 2018, 30, .	1.6	29
52	Some Applications of CFD With Examples. , 2018, , 291-367.		0
53	Determination of epsilon for Omega vortex identification method. Journal of Hydrodynamics, 2018, 30, 541-548.	1.3	115
54	Rortex and comparison with eigenvalue-based vortex identification criteria. Physics of Fluids, 2018, 30, .	1.6	225

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55	Definitions of vortex vector and vortex. Journal of Fluid Mechanics, 2018, 849, 312-339.	1.4	95
56	Numerical study of micro-ramp vortex generator for supersonic ramp flow control at Mach 2.5. Shock Waves, 2017, 27, 79-96.	1.0	29
57	Numerical Investigation on the Oblique Shock and High-speed Vortex Rings Interaction. , 2017, , .		0
58	Spectrum analysis of SWBLI under ramp-type MVG control. , 2017, , .		0
59	Observation of the development of -vortex to hairpin vortex packet. , 2017, , .		0
60	DNS Study on Three Vortex Identification Methods. , 2017, , .		7
61	LES Study on Unsteadiness of Shock Boundary Layer Interaction. , 2017, , .		3
62	DNS study on bursting and intermittency in late boundary layer transition. Science China: Physics, Mechanics and Astronomy, 2017, 60, 1.	2.0	6
63	Simulation of natural convection in an inclined polar cavity using a finite-difference lattice Boltzmann method. Journal of Mechanical Science and Technology, 2017, 31, 3053-3065.	0.7	6
64	DNS Study on Vortex and Vorticity in Late Boundary Layer Transition. Communications in Computational Physics, 2017, 22, 441-459.	0.7	53
65	New theory on turbulence generation and structureâ€"DNS and experiment. Science China: Physics, Mechanics and Astronomy, 2017, 60, 1.	2.0	9
66	New omega vortex identification method. Science China: Physics, Mechanics and Astronomy, 2016, 59, 1.	2.0	348
67	ILES for mechanism of ramp-type MVG reducing shock induced flow separation. Science China: Physics, Mechanics and Astronomy, 2016, 59, 1.	2.0	13
68	Analysis on Î›-vortex development in a transitional boundary layer. , 2016, , .		1
69	DNS Study on Motion around a Vortex Ring in Transitional Boundary Layers. , 2016, , .		1
70	LES Analysis on Shock-Vortex Ring Interaction. , 2016, , .		3
71	Construction Methodology of Weighted Upwind Compact Scheme. , 2016, , .		2
72	New Vortex Identification Method and Vortex Ring Development Analysis in Boundary Layer Transition. , 2016, , .		7

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73	Physics of multiple level hairpin vortex structures in turbulence. Science China: Physics, Mechanics and Astronomy, 2016, 59, 1.	2.0	15
74	DNS study on the formation of Lambda rotational core and the role of TS wave in boundary layer transition. Journal of Turbulence, 2016, 17, 572-601.	0.5	9
75	New visualization method for vortex structure in turbulence by lambda2 and vortex filaments. Applied Mathematical Modelling, 2016, 40, 500-509.	2.2	25
76	Self-Contradictions in Classical and Current Turbulence Theory and New Turbulence Genearation Theory. , 2016, , .		0
77	LES Study on Mechanism of Reduction of Shock Induced Flow Separation by MVG. , 2015, , .		6
78	Separation Topology of Microramp Vortex Generator Controlled Flow at Mach Number 2.5. Journal of Aircraft, 2015, 52, 2095-2100.	1.7	8
79	DNS Study on Role of Linearly Unstable Modes in Flow Transition. , 2015, , .		3
80	Optimization of MVG Position for Control of Shock Boundary Layer Interaction. , 2015, , .		1
81	DNS Study on Hairpin Vortex Structure in Turbulence. , 2015, , .		2
82	DNS Study of Turbulence Structure in a Boundary Layer. , 2014, , .		0
83	DNS study on Î›-vortex and vortex ring formation in flow transition at Mach number 0.5. Journal of Turbulence, 2014, 15, 1-21.	0.5	34
84	Study on the ring-like vortical structure in MVG controlled supersonic ramp flow with different inflow conditions. Aerospace Science and Technology, 2014, 35, 106-115.	2.5	19
85	Physics of turbulence generation and sustenance in a boundary layer. Computers and Fluids, 2014, 102, 353-384.	1.3	113
86	The Vortical Structures in the Rear Separation and Wake Produced by a Supersonic Micro-Ramp. Flow, Turbulence and Combustion, 2014, 93, 25-36.	1.4	3
87	Numerical and Experimental Investigations of the Supersonic Microramp Wake. AIAA Journal, 2014, 52, 1518-1527.	1.5	22
88	LES investigation into the generation of momentum deficits in the supersonic wake of a micro-ramp. Journal of Mechanical Science and Technology, 2014, 28, 1327-1337.	0.7	5
89	Numerical investigation on chaos in late boundary layer transition to turbulence. Computers and Fluids, 2014, 91, 68-76.	1.3	4
90	Modified weighted compact scheme with global weights for shock capturing. Computers and Fluids, 2014, 96, 165-176.	1.3	17

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91	LES and analyses on the vortex structure behind supersonic MVG with turbulent inflow. Applied Mathematical Modelling, 2014, 38, 196-211.	2.2	15
92	Influence of Different Inlet Flow on the Ring-like Vortex Structure in MVG Controlled Supersonic Ramp Flow. , 2014, , .		1
93	Study on the initial evolution of ring-like vortices generated by MVG. CEAS Aeronautical Journal, 2013, 4, 433-442.	0.9	10
94	Study on shock wave-vortex ring interaction by the micro vortex generator controlled ramp flow with turbulent inflow. Aerospace Science and Technology, 2013, 30, 226-231.	2.5	28
95	Study on multiple ring-like vortex formation and small vortex generation in late flow transition on a flat plate. Theoretical and Computational Fluid Dynamics, 2013, 27, 41-70.	0.9	14
96	Numerical investigation on mechanism of multiple vortex rings formation in late boundary-layer transition. Computers and Fluids, 2013, 71, 156-168.	1.3	4
97	Shear Layer Stability Analysis in Later Boundary Layer Transition and MVG controlled flow. , 2013, , .		7
98	Further Investigation on Shock Wave -Vortex Ring Interaction by the MVG Controlled Ramp Flow. , 2013, , .		2
99	Numerical and Experimental Investigations of the Flow behind a Supersonic Micro-Ramp. , 2013, , .		3
100	New Theories on Boundary Layer Transition and Turbulence Formation. Modelling and Simulation in Engineering, 2012, 2012, 1-22.	0.4	7
101	DNS Study on Physics of Late Boundary Layer Transition. , 2012, , .		13
102	Modified Upwinding Compact Scheme for Shock and Shock Boundary Layer Interaction. Communications in Computational Physics, 2012, 11, 1022-1042.	0.7	2
103	Numerical discovery and experimental confirmation of vortex ring generation by microramp vortex generator. Applied Mathematical Modelling, 2012, 36, 5700-5708.	2.2	33
104	Microvortex generators in high-speed flow. Progress in Aerospace Sciences, 2012, 53, 30-45.	6.3	98
105	Study on Shock wave-Vortex Ring Interaction by the MVG Controlled Ramp Flow with Turbulence inlet from DNS. , 2012, , .		1
106	Numerical study on U-shaped vortex formation in late boundary layer transition. Computers and Fluids, 2012, 55, 36-47.	1.3	14
107	DNS study on mechanism of small length scale generation in late boundary layer transition. Physica D: Nonlinear Phenomena, 2012, 241, 11-24.	1.3	27
108	Numerical Discovery and Experimental Validation of Vortex Ring Generation by Microramp Vortex Generator. , 2012, , 403-408.		4

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109	LES Study on Mechanism of Vortex Rings behind Supersonic MVG with Turbulent Inflow. , 2012, , .		5
110	Numerical Study on Mechanism of Multiple Ring Formation. , 2012, , .		2
111	Numerical Study on Randomization in Late Boundary Layer Transition. , 2012, , .		4
112	Numerical and theoretical study on â€˜vortex breakdownâ€™. International Journal of Computer Mathematics, 2011, 88, 3702-3708.	1.0	12
113	Numerical Study of Mechanism of U-Shaped Vortex Formation. , 2011, , .		14
114	Numerical Study of Mechanism of Small Vortex Generation in Boundary Layer Transition. , 2011, , .		9
115	Review of Micro Vortex Generators in High-Speed Flow. , 2011, , .		18
116	Interaction of Microvortex Generator Flow with Ramp-Induced Shock/Boundary-Layer Interactions. , 2011, , .		7
117	Numerical, Experimental and Theoretical Studies on Mechanism of K-H Instability and Ring Generation behind Supersonic MVG. , 2011, , .		9
118	Numerical and Experimental Studies on the Separation Topology of the MVG Controlled Flow at M=2.5. , 2011, , .		18
119	The Interaction between Vortex Rings and Oblique Shocks by the MVG Controlled Ramp Flow at M=2.5. , 2011, , .		3
120	Parallel DNS for vortex structure of late stages of flow transition. Computers and Fluids, 2011, 45, 129-137.	1.3	45
121	Evolution of the vortex structures and turbulent spots at the late-stage of transitional boundary layers. Science China: Physics, Mechanics and Astronomy, 2011, 54, 986-990.	2.0	16
122	Numerical study on mechanisms of second sweep and positive spikes in transitional flow on a flat plate. Computers and Fluids, 2011, 40, 28-41.	1.3	26
123	Implicit LES for Supersonic Microramp Vortex Generator: New Discoveries and New Mechanisms. Modelling and Simulation in Engineering, 2011, 2011, 1-15.	0.4	18
124	New Findings by High-Order DNS for Late Flow Transition in a Boundary Layer. Modelling and Simulation in Engineering, 2011, 2011, 1-16.	0.4	9
125	Evolution of the ring-like vortices and spike structure in transitional boundary layers. Science China: Physics, Mechanics and Astronomy, 2010, 53, 514-520.	2.0	9
126	Truncation error, dissipation and dispersion terms of fifth order WENO and of WCS for 1D conservation law. International Journal of Computer Mathematics, 2010, 87, 339-352.	1.0	3

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127	High-order compact scheme for boundary points. International Journal of Computer Mathematics, 2010, 87, 1795-1819.	1.0	1
128	Declining Angle Effects of the Trailing Edge of a Microramp Vortex Generator. Journal of Aircraft, 2010, 47, 2086-2095.	1.7	34
129	Study of Mechanism of Ring-Like Vortex Formation in Late Flow Transition. , 2010, , .		42
130	DNS for Late Stage Structure of Flow Transition on a Flat-Plate Boundary Layer. , 2010, , .		9
131	Experimental and Numerical Study of Flow Topology Past Micro-Vortex Generators. , 2010, , .		19
132	LES for Supersonic Ramp Control Flow Using MVG at M=2.5 and Re?=1440. , 2010, , .		37
133	Numerical Investigations on the Effects of the Declining Back-Edge of MVG. , 2010, , .		10
134	Numerical study of passive and active flow separation control over a NACA0012 airfoil. Computers and Fluids, 2008, 37, 975-992.	1.3	92
135	Verification and Validation of LES for Interaction of Wingtip Vortex and Wakes. , 2008, , .		1
136	Large-eddy simulation of wing tip vortex in the near field. International Journal of Computational Fluid Dynamics, 2008, 22, 289-330.	0.5	14
137	LES for Interaction of Wingtip Vortex and Wakes. , 2007, , .		0
138	DNS for flow separation control around an airfoil by pulsed jets. Computers and Fluids, 2007, 36, 1040-1060.	1.3	34
139	Les for near field wakes behind junction of wing and plate. Journal of Hydrodynamics, 2006, 18, 265-268.	1.3	0
140	LES for near field wakes behind junction of wing and plate. Journal of Hydrodynamics, 2006, 18, 270-274.	1.3	1
141	High performance computation for DNS/LES. Applied Mathematical Modelling, 2006, 30, 1143-1165.	2.2	12
142	Direct numerical simulation of flow separation around a NACA 0012 airfoil. Computers and Fluids, 2005, 34, 1096-1114.	1.3	120
143	TRUNCATION ERROR REDUCTION METHOD FOR POISSON EQUATION. Modern Physics Letters B, 2005, 19, 1555-1558.	1.0	0
144	Instability-wave propagation in boundary-layer flows at subsonic through hypersonic Mach numbers. Mathematics and Computers in Simulation, 2004, 65, 469-487.	2.4	12

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145	Numerical Simulation for Flow Separation Control with Pulsed Vortex Generator Jets. , 2003, , .		2
146	Weighted Compact Scheme for Shock Capturing. International Journal of Computational Fluid Dynamics, 2001, 15, 147-155.	0.5	76
147	Direct Numerical Simulation of Boundary-Layer Receptivity for Subsonic Flow Around Airfoil. Fluid Mechanics and Its Applications, 1999, , 203-218.	0.1	22
148	Non-Reflecting Boundary Conditions for DNS in Curvilinear Coordinates. Fluid Mechanics and Its Applications, 1999, , 219-233.	0.1	29
149	Multigrid Mapping and Box Relaxation for Simulation of the Whole Process of Flow Transition in 3D Boundary Layers. Journal of Computational Physics, 1995, 119, 325-341.	1.9	63
150	Self-Contradictions of Current Turbulence Theory and Liuâ€™s New Turbulence Generation Theory. , 0, , .		1