

Xuesong Wu

List of Publications by Year in descending order

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papers

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citing authors

#	ARTICLE	IF	CITATIONS
1	Triadic Resonance Analysis of Distributed Roughness Effects on Crossflow Instability in Swept-Wing Boundary Layers. IUTAM Symposium on Cellular, Molecular and Tissue Mechanics, 2022, , 825-836.	0.1	0
2	Surface-Roughness Effects on Crossflow Instability of Swept-Wing Boundary Layers Through Generalized Resonances. AIAA Journal, 2022, 60, 2887-2904.	1.5	5
3	Effects of spanwise-periodic surface heating on supersonic boundary-layer instability. Journal of Fluid Mechanics, 2022, 940, .	1.4	2
4	Nonlinear evolution and low-frequency acoustic radiation of ring-mode coherent structures on subsonic turbulent circular jets. Journal of Fluid Mechanics, 2022, 940, .	1.4	3
5	Receptivity of inviscid modes in supersonic boundary layers to wall perturbations. Journal of Engineering Mathematics, 2021, 128, 1.	0.6	3
6	Elevated low-frequency free-stream vortical disturbances eliminate boundary-layer separation. Journal of Fluid Mechanics, 2021, 920, .	1.4	3
7	Nonlinear evolution and acoustic radiation of coherent structures in subsonic turbulent free shear layers. Journal of Fluid Mechanics, 2020, 884, .	1.4	11
8	Coherent vortices and streaks in boundary layer subject to pressure gradient: excitation by free stream vortical disturbances, nonlinear evolution and secondary instability. Journal of Fluid Mechanics, 2020, 900, .	1.4	12
9	Effects of streamwise-elongated and spanwise-periodic surface roughness elements on boundary-layer instability. Journal of Fluid Mechanics, 2020, 899, .	1.4	5
10	Receptivity of inviscid modes in supersonic boundary layers due to scattering of free-stream sound by localised wall roughness. Journal of Fluid Mechanics, 2020, 896, .	1.4	26
11	Nonlinear evolution of interacting sinuous and varicose modes in plane wakes and jets: Quasi-periodic structures. Physics of Fluids, 2020, 32, 064104.	1.6	1
12	Generation of first Mack modes in supersonic boundary layers by slow acoustic waves interacting with streamwise isolated wall roughness. Journal of Fluid Mechanics, 2020, 888, .	1.4	21
13	First-principle description of acoustic radiation of shear flows. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2019, 377, 20190077.	1.6	4
14	Receptivity of supersonic boundary layers over smooth and wavy surfaces to impinging slow acoustic waves. Journal of Fluid Mechanics, 2019, 872, 849-888.	1.4	7
15	Effects of distributed roughness on crossflow instability through generalized resonance mechanisms. Journal of Fluid Mechanics, 2019, 858, 787-831.	1.4	5
16	Nonlinear Theories for Shear Flow Instabilities: Physical Insights and Practical Implications. Annual Review of Fluid Mechanics, 2019, 51, 451-485.	10.8	38
17	Stationary crossflow vortices near the leading edge of three-dimensional boundary layers: the role of non-parallelism and excitation by surface roughness. Journal of Fluid Mechanics, 2018, 845, 93-140.	1.4	11
18	A local scattering approach for the effects of abrupt changes on boundary-layer instability and transition: a finite-Reynolds-number formulation for isolated distortions. Journal of Fluid Mechanics, 2017, 822, 444-483.	1.4	12

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19	Nonlinear unsteady streaks engendered by the interaction of free-stream vorticity with a compressible boundary layer. <i>Journal of Fluid Mechanics</i> , 2017, 817, 80-121.	1.4	24
20	Nonlinear evolution and secondary instability of steady and unsteady Görtler vortices induced by free-stream vortical disturbances. <i>Journal of Fluid Mechanics</i> , 2017, 829, 681-730.	1.4	38
21	Entrainment of short-wavelength free-stream vortical disturbances in compressible and incompressible boundary layers. <i>Journal of Fluid Mechanics</i> , 2016, 797, 683-728.	1.4	25
22	Nonlinear dynamics of large-scale coherent structures in turbulent free shear layers. <i>Journal of Fluid Mechanics</i> , 2016, 787, 396-439.	1.4	13
23	A local scattering theory for the effects of isolated roughness on boundary-layer instability and transition: transmission coefficient as an eigenvalue. <i>Journal of Fluid Mechanics</i> , 2016, 794, 68-108.	1.4	44
24	The behaviour of Tollmien-Schlichting waves undergoing small-scale localised distortions. <i>Journal of Fluid Mechanics</i> , 2016, 792, 499-525.	1.4	27
25	Response and receptivity of the hypersonic boundary layer past a wedge to free-stream acoustic, vortical and entropy disturbances. <i>Journal of Fluid Mechanics</i> , 2016, 797, 874-915.	1.4	21
26	Non-Parallel-Flow Effects on Stationary Crossflow Vortices at Their Genesis. <i>Procedia IUTAM</i> , 2015, 14, 311-320.	1.2	1
27	A non-perturbative approach to spatial instability of weakly non-parallel shear flows. <i>Physics of Fluids</i> , 2015, 27, 054102.	1.6	13
28	On the role of acoustic feedback in boundary-layer instability. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2014, 372, 20130347.	1.6	2
29	Linear and weakly nonlinear instability of a premixed curved flame under the influence of its spontaneous acoustic field. <i>Journal of Fluid Mechanics</i> , 2014, 758, 180-220.	1.4	19
30	On continuous spectra of the Orr-Sommerfeld/Squire equations and entrainment of free-stream vortical disturbances. <i>Journal of Fluid Mechanics</i> , 2013, 732, 616-659.	1.4	40
31	The role of acoustic feedback in boundary-layer instability. , 2013, , .		0
32	Spectral broadening and flow randomization in free shear layers. <i>Journal of Fluid Mechanics</i> , 2012, 706, 431-469.	1.4	11
33	Excitation of steady and unsteady Görtler vortices by free-stream vortical disturbances. <i>Journal of Fluid Mechanics</i> , 2011, 682, 66-100.	1.4	80
34	Evolution and instability of unsteady nonlinear streaks generated by free-stream vortical disturbances. <i>Journal of Fluid Mechanics</i> , 2011, 677, 1-38.	1.4	73
35	On generation of sound in wall-bounded shear flows: back action of sound and global acoustic coupling. <i>Journal of Fluid Mechanics</i> , 2011, 689, 279-316.	1.4	20
36	Large-activation-energy theory for premixed combustion under the influence of enthalpy fluctuations. <i>Journal of Fluid Mechanics</i> , 2010, 655, 3-37.	1.4	8

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37	On the linear instability of a finite Stokes layer: Instantaneous versus Floquet modes. <i>Physics of Fluids</i> , 2010, 22, .	1.6	35
38	Low-frequency sound radiated by a nonlinearly modulated wavepacket of helical modes on a subsonic circular jet. <i>Journal of Fluid Mechanics</i> , 2009, 637, 173-211.	1.4	37
39	Flame-acoustic resonance initiated by vortical disturbances. <i>Journal of Fluid Mechanics</i> , 2009, 634, 321.	1.4	11
40	Instability of a stratified boundary layer and its coupling with internal gravity waves. Part 1. Linear and nonlinear instabilities. <i>Journal of Fluid Mechanics</i> , 2008, 595, 379-408.	1.4	11
41	Instability of a stratified boundary layer and its coupling with internal gravity waves. Part 2. Coupling with internal gravity waves via topography. <i>Journal of Fluid Mechanics</i> , 2008, 595, 409-433.	1.4	11
42	Nonlinear development of subsonic modes on compressible mixing layers: a unified strongly nonlinear critical-layer theory. <i>Journal of Fluid Mechanics</i> , 2008, 614, 105-144.	1.4	7
43	Preface. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2008, 366, 2645-2648.	1.6	0
44	On the catalytic role of the phase-locked interaction of Tollmienâ€“Schlichting waves in boundary-layer transition. <i>Journal of Fluid Mechanics</i> , 2007, 590, 265-294.	1.4	22
45	Response of a compressible laminar boundary layer to free-stream vortical disturbances. <i>Journal of Fluid Mechanics</i> , 2007, 587, 97-138.	1.4	67
46	Acoustic radiation of Tollmienâ€“Schlichting waves as they undergo rapid distortion. <i>Journal of Fluid Mechanics</i> , 2006, 550, 307.	1.4	34
47	Asymptotic approach to combustion instability. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2005, 363, 1247-1259.	1.6	5
48	Mach wave radiation of nonlinearly evolving supersonic instability modes in shear layers. <i>Journal of Fluid Mechanics</i> , 2005, 523, 121-159.	1.4	31
49	Influence of small imperfections on the stability of plane Poiseuille flow: A theoretical model and direct numerical simulation. <i>Physics of Fluids</i> , 2004, 16, 2852-2863.	1.6	10
50	Combustion instability due to the nonlinear interaction between sound and flame. <i>Journal of Fluid Mechanics</i> , 2003, 497, 23-53.	1.4	50
51	Linear and nonlinear instabilities of a Blasius boundary layer perturbed by streamwise vortices. Part 1. Steady streaks. <i>Journal of Fluid Mechanics</i> , 2003, 483, 225-248.	1.4	31
52	Linear and nonlinear instabilities of a Blasius boundary layer perturbed by streamwise vortices. Part 2. Intermittent instability induced by long-wavelength Klebanoff modes. <i>Journal of Fluid Mechanics</i> , 2003, 483, 249-286.	1.4	53
53	Generation of sound and instability waves due to unsteady suction and injection. <i>Journal of Fluid Mechanics</i> , 2002, 453, 289-313.	1.4	15
54	On local boundary-layer receptivity to vortical disturbances in the free stream. <i>Journal of Fluid Mechanics</i> , 2001, 449, 373-393.	1.4	37

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55	Receptivity of boundary layers with distributed roughness to vortical and acoustic disturbances: a second-order asymptotic theory and comparison with experiments. <i>Journal of Fluid Mechanics</i> , 2001, 431, 91-133.	1.4	71
56	Generation of Tollmien-Schlichting waves by convecting gusts interacting with sound. <i>Journal of Fluid Mechanics</i> , 1999, 397, 285-316.	1.4	46
57	On the nonlinear evolution of a pair of oblique Tollmien-Schlichting waves in boundary layers. <i>Journal of Fluid Mechanics</i> , 1997, 340, 361-394.	1.4	10
58	On the weakly nonlinear development of Tollmien-Schlichting wavetrains in boundary layers. <i>Journal of Fluid Mechanics</i> , 1996, 323, 133-171.	1.4	13
59	On an active resonant triad of mixed modes in symmetric shear flows: a plane wake as a paradigm. <i>Journal of Fluid Mechanics</i> , 1996, 317, 337-368.	1.4	13
60	Interaction of phase-locked modes: a new mechanism for the rapid growth of three-dimensional disturbances. <i>Journal of Fluid Mechanics</i> , 1996, 316, 335-372.	1.4	39
61	Viscous effects on fully coupled resonant-triad interactions: an analytical approach. <i>Journal of Fluid Mechanics</i> , 1995, 292, 377-407.	1.4	30
62	A critical-layer analysis of the resonant triad in boundary-layer transition: nonlinear interactions. <i>Journal of Fluid Mechanics</i> , 1993, 256, 85-106.	1.4	41
63	Nonlinear temporal-spatial modulation of near-planar Rayleigh waves in shear flows: formation of streamwise vortices. <i>Journal of Fluid Mechanics</i> , 1993, 256, 685-719.	1.4	27
64	On the weakly nonlinear three-dimensional instability of shear layers to pairs of oblique waves: the Stokes layer as a paradigm. <i>Journal of Fluid Mechanics</i> , 1993, 253, 681.	1.4	83
65	The nonlinear evolution of high-frequency resonant-triad waves in an oscillatory Stokes layer at high Reynolds number. <i>Journal of Fluid Mechanics</i> , 1992, 245, 553.	1.4	56