S I Abarzhi

List of Publications by Year
in descending order

59 papers	1,140 citations	361413 20 h-index	414414 32 g-index
63 all docs	63 docs citations	63 times ranked	372 citing authors

#	Article	IF	Citations
1	On Rayleigh-Taylor and Richtmyer-Meshkov Dynamics With Inverse-Quadratic Power-Law Acceleration. Frontiers in Applied Mathematics and Statistics, 2022, 7, .	1.3	4
2	Preface: Non-equilibrium transport, interfaces, and mixing in plasmas. Physics of Plasmas, 2022, 29, 032103.	1.9	0
3	Interface dynamics and flow fieldsâ€™ structure under thermal heat flux, thermal conductivity, destabilizing acceleration and inertial stabilization. SN Applied Sciences, 2022, 4, .	2.9	1
4	Supernovae and the Arrow of Time. Entropy, 2022, 24, 829.	2.2	3
5	Regular and Singular Behaviours and New Morphologies in the Rayleigh Taylor Instability. MATRIX Book Series, 2021, , 359-373.	0.2	0
6	Scale-Dependent and Self-Similar Rayleigh–Taylor and Richtmyer–Meshkov Dynamics Induced by Acceleration Varying with Length Scale. SIAM Journal on Applied Mathematics, 2021, 81, 1002-1019.	1.8	1
7	Effect of adiabatic index on Richtmyerâ€“Meshkov flows induced by strong shocks. Physics of Fluids, 2021, 33, .	4.0	12
8	Macroscopic and microscopic stabilization mechanisms of unstable interface with interfacial mass flux. Physics of Plasmas, 2021, 28, .	1.9	2
9	Experiments on plasma arcs at a waterâ€“air interface. Physics of Plasmas, 2021, 28, .	1.9	4
10	On interplay of surface tension and inertial stabilization mechanisms in the stable and unstable interface dynamics with the interfacial mass flux. Physica Scripta, 2021, 96, 084001.	2.5	1
11	Effect of dimensionality and symmetry on scale-dependent dynamics of Rayleighâ€“Taylor instability. Fluid Dynamics Research, 2021, 53, 035507.	1.3	2
12	Scale-dependent Rayleighâ€“Taylor dynamics with variable acceleration in a finite-sized domain for three-dimensional flows. Physics of Fluids, 2021, 33, .	4.0	4
13	Interface dynamics under thermal heat flux, inertial stabilization and destabilizing acceleration. Physics Letters, Section A: General, Atomic and Solid State Physics, 2021, 426, 127827.	2.1	1
14	Self-similar interfacial mixing with variable acceleration. Physics of Fluids, 2021, 33, .	4.0	11
15	Scale-dependent Rayleighâ€“Taylor dynamics with variable acceleration by group theory approach. Physics of Plasmas, 2020, 27, 072107.	1.9	12
16	Inertial dynamics of an interface with interfacial mass flux: Stability and flow fieldsâ€™ structure, inertial stabilization mechanism, degeneracy of Landauâ€™s solution, effect of energy fluctuations, and chemistry-induced instabilities. Physics of Fluids, 2020, 32, 082105.	4.0	10
17	Whittle maximum likelihood estimate of spectral properties of Rayleigh-Taylor interfacial mixing using hot-wire anemometry experimental data. Physical Review E, 2020, 102, 053107.	2.1	5
18	Richtmyerâ€“Meshkov dynamics with variable acceleration by group theory approach. Applied Mathematics Letters, 2020, 105, 106338.	2.7	1

#	Article	IF	Citations
19	On the dynamics of Richtmyerâ€“Meshkov bubbles in unstable three-dimensional interfacial coherent structures with time-dependent acceleration. Physics of Fluids, 2020, 32, 062107.	4.0	6
20	Early- and late-time evolution of Rayleighâ€“Taylor instability in a finite-sized domain by means of group theory analysis. Fluid Dynamics Research, 2020, 52, 025504.	1.3	3
21	Interface dynamics: Mechanisms of stabilization and destabilization and structure of flow fields. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 18218-18226.	7.1	19
22	On the Rayleigh-Taylor unstable dynamics of three-dimensional interfacial coherent structures with time-dependent acceleration. AIP Advances, 2019, 9, 075012.	1.3	4
23	Group theory and jellyâ€™s experiment of Rayleighâ€“Taylor instability and Rayleighâ€“Taylor interfacial mixing. Fluid Dynamics Research, 2019, 51, 065502.	1.3	25
24	Interfaces and mixing: Nonequilibrium transport across the scales. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 18171-18174.	7.1	18
25	Supernova, nuclear synthesis, fluid instabilities, and interfacial mixing. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 18184-18192.	7.1	56
26	Group theory analysis of early-time scale-dependent dynamics of the Rayleigh-Taylor instability with time varying acceleration. Physical Review Fluids, 2019, 4, .	2.5	12
27	Analysis of dynamics, stability, and flow fields' structure of an accelerated hydrodynamic discontinuity with interfacial mass flux by a general matrix method. Physics of Plasmas, 2018, 25, .	1.9	12
28	Deterministic and stochastic dynamics of Rayleighâ€“Taylor mixing with a power-law time-dependent acceleration. Physica Scripta, 2017, 92, 014002.	2.5	5
29	Maximum initial growth-rate of strong-shock-driven Richtmyer-Meshkov instability. Physics of Plasmas, 2017, 24, .	1.9	21
30	Effect of a relative phase of waves constituting the initial perturbation and the wave interference on the dynamics of strong-shock-driven Richtmyer-Meshkov flows. Physical Review Fluids, 2017, 2, .	2.5	21
31	Richtmyer-Meshkov unstable dynamics influenced by pressure fluctuations. Physics of Plasmas, 2016, 23, .	1.9	6
32	Rayleigh-Taylor mixing in supernova experiments. Physics of Plasmas, 2015, 22, .	1.9	43
33	Effect of initial perturbation amplitude on Richtmyer-Meshkov flows induced by strong shocks. Physics of Plasmas, 2015, 22, .	1.9	37
34	Stability of a hydrodynamic discontinuity. Physica Scripta, 2015, 90, 018002.	2.5	11
35	Perturbation theory and numerical modelling of weakly and moderately nonlinear dynamics of the incompressible Richtmyerâ€“Meshkov instability. Journal of Fluid Mechanics, 2014, 751, 432-479.	3.4	32
36	Turbulent mixing and beyond: non-equilibrium processes from atomistic to astrophysical scales. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2013, 371, 20120435.	3.4	11

#	Article	IF	Citations
37	What is certain and what is not so certain in our knowledge of Rayleighâ€“Taylor mixing?. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2013, 371, 20130266.	3.4	50
38	Turbulent mixing and beyond: non-equilibrium processes from atomistic to astrophysical scales II. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2013, 371, 20130268.	3.4	27
39	Non-uniform volumetric structures in Richtmyer-Meshkov flows. Physics of Fluids, 2013, 25, .	4.0	19
40	Turbulent mixing and beyond: non-equilibrium processes from atomistic to astrophysical scales I. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2013, 371, 20120436.	3.4	9
41	Scale coupling in Richtmyer-Meshkov flows induced by strong shocks. Physics of Plasmas, 2012, 19, .	1.9	35
42	On fundamentals of Rayleigh-Taylor turbulent mixing. Europhysics Letters, 2010, 91, 35001.	2.0	46
43	Review of theoretical modelling approaches of Rayleighâ€“Taylor instabilities and turbulent mixing. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2010, 368, 1809-1828.	3.4	140
44	High-performance holographic technologies for fluid-dynamics experiments. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2010, 368, 1705-1737.	3.4	26
45	Turbulent mixing and beyond. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2010, 368, 1539-1546.	3.4	22
46	A comparative study of approaches for modeling Rayleighâ€“Taylor turbulent mixing. Physica Scripta, 2010, T142, 014012.	2.5	25
47	Review of nonlinear dynamics of the unstable fluid interface: conservation laws and group theory. Physica Scripta, 2008, T132, 014012.	2.5	49
48	Coherent structures and pattern formation in Rayleighâ€“Taylor turbulent mixing. Physica Scripta, 2008, 78, 015401.	2.5	26
49	Nonlinear evolution of the Richtmyerâ€“Meshkov instability. Journal of Fluid Mechanics, 2008, 612, 311-338.	3.4	43
50	Multiscale character of the nonlinear coherent dynamics in the Rayleigh-Taylor instability. Physical Review E, 2006, 73, 036310.	2.1	26
51	Rayleighâ€“Taylor turbulent mixing of immiscible, miscible and stratified fluids. Physics of Fluids, 2005, 17, 081705.	4.0	54
52	Dynamics of two-dimensional Rayleighâ€“Taylor bubbles for fluids with a finite density contrast. Physics of Fluids, 2003, 15, 2190-2197.	4.0	24
53	Nonlinear evolution of unstable fluid interface. Physical Review E, 2002, 66, 036301.	2.1	6
54	Low-symmetric bubbles in Rayleighâ€“Taylor instability. Physics of Fluids, 2001, 13, 2182-2189.	4.0	7

#	Article	IF	Citations
55	Asymptotic behavior of three-dimensional bubbles in the Richtmyerâ€“Meshkov instability. Physics of Fluids, 2001, 13, 2866-2875.	4.0	6
56	Regular and singular late-time asymptotes of potential motion of fluid with a free boundary. Physics of Fluids, 2000, 12, 3112-3120.	4.0	7
57	Length scale for bubble problem in Rayleighâ€“Taylor instability. Physics of Fluids, 1999, 11, 940-942.	4.0	12
58	Three-dimensional bubbles in Rayleighâ€“Taylor instability. Physics of Fluids, 1999, 11, 3306-3311.	4.0	13
59	Stable Steady Flows in Rayleigh-Taylor Instability. Physical Review Letters, 1998, 81, 337-340.	7.8	51