Emmanuel Villermaux

List of Publications by Year
in descending order

100 papers	7,594 citations	76196 40 h-index	51492 86 g-index
102 all docs	102 docs citations	102 times ranked	5076 citing authors

#	Article	IF	Citations
1	Physics of liquid jets. Reports on Progress in Physics, 2008, 71, 036601.	8.1	1,384
2	â€˜Infotaxisâ€™ as a strategy for searching without gradients. Nature, 2007, 445, 406-409.	13.7	653
3	On spray formation. Journal of Fluid Mechanics, 2004, 498, 73-111.	1.4	537
4	Fragmentation. Annual Review of Fluid Mechanics, 2007, 39, 419-446.	10.8	320
5	Break-up and atomization of a round water jet by a high-speed annular air jet. Journal of Fluid Mechanics, 1998, 357, 351-379.	1.4	315
6	Single-drop fragmentation determines size distribution of raindrops. Nature Physics, 2009, 5, 697-702.	6.5	292
7	Bursting bubble aerosols. Journal of Fluid Mechanics, 2012, 696, 5-44.	1.4	229
8	Flow regimes of large-velocity-ratio coaxial jets. Journal of Fluid Mechanics, 1997, 345, 357-381.	1.4	194
9	Drop fragmentation on impact. Journal of Fluid Mechanics, 2011, 668, 412-435.	1.4	163
10	Atomization by jet impact. Journal of Fluid Mechanics, 2006, 549, 273.	1.4	156
11	Mixing in coaxial jets. Journal of Fluid Mechanics, 2000, 425, 161-185.	1.4	128
12	Ligament-Mediated Spray Formation. Physical Review Letters, 2004, 92, 074501.	2.9	128
13	Life of a flapping liquid sheet. Journal of Fluid Mechanics, 2002, 462, 341-363.	1.4	124
14	Stretching, Coalescence, and Mixing in Porous Media. Physical Review Letters, 2013, 110, 204501.	2.9	117
15	How vortices mix. Journal of Fluid Mechanics, 2003, 476, 213-222.	1.4	104
16	Mixing and Spray Formation in Coaxial Jets. Journal of Propulsion and Power, 1998, 14, 807-817.	1.3	98
17	The lamellar description of mixing in porousÂmedia. Journal of Fluid Mechanics, 2015, 770, 458-498.	1.4	96
18	Mixing Versus Stirring. Annual Review of Fluid Mechanics, 2019, 51, 245-273.	10.8	96

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19	Life of a smooth liquid sheet. Journal of Fluid Mechanics, 2002, 462, 307-340.	1.4	95
20	Short-term dynamics of a density interface following an impact. Journal of Fluid Mechanics, 2007, 577, 241-250.	1.4	94
21	Odor Landscapes in Turbulent Environments. Physical Review X, 2014, 4, .	2.8	93
22	Memory-Induced Low Frequency Oscillations in Closed Convection Boxes. Physical Review Letters, 1995, 75, 4618-4621.	2.9	92
23	Mixing as an Aggregation Process. Physical Review Letters, 2003, 91, 184501.	2.9	91
24	Atomization of undulating liquid sheets. Journal of Fluid Mechanics, 2007, 585, 421-456.	1.4	86
25	Fragmentation of stretched liquid ligaments. Physics of Fluids, 2004, 16, 2732-2741.	1.6	85
26	Ageing and burst of surface bubbles. Journal of Fluid Mechanics, 2018, 851, 636-671.	1.4	84
27	Drop Shaping by Laser-Pulse Impact. Physical Review Applied, 2015, 3, .	1.5	76
28	Dynamic Buckling and Fragmentation in Brittle Rods. Physical Review Letters, 2005, 94, 035503.	2.9	75
29	Fragmentation versus Cohesion. Journal of Fluid Mechanics, 2020, 898, .	1.4	74
30	Mixing by random stirring in confined mixtures. Journal of Fluid Mechanics, 2008, 617, 51-86.	1.4	71
31	Two hundred years of capillarity research. Physics Today, 2006, 59, 39-44.	0.3	65
32	On the geometry of turbulent mixing. Journal of Fluid Mechanics, 1999, 393, 123-147.	1.4	63
33	The diffusive strip method for scalar mixing in two dimensions. Journal of Fluid Mechanics, 2010, 662, 134-172.	1.4	58
34	Bursting thin liquid films. Journal of Fluid Mechanics, 2005, 524, 121-130.	1.4	56
35	Drop deformation by laser-pulse impact. Journal of Fluid Mechanics, 2016, 794, 676-699.	1.4	51
36	On the role of viscosity in shear instabilities. Physics of Fluids, 1998, 10, 368-373.	1.6	47

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37	The spontaneous puncture of thick liquid films. Journal of Fluid Mechanics, 2018, 838, 192-221.	1.4	47
38	Mixing by porous media. Comptes Rendus - Mecanique, 2012, 340, 933-943.	2.1	46
39	Bridging kinematics and concentration content in a chaotic micromixer. Physical Review E, 2008, 77, 015301.	0.8	45
40	Soap Films Burst Like Flapping Flags. Physical Review Letters, 2009, 103, 054501.	2.9	43
41	Line Dispersion in Homogeneous Turbulence: Stretching, Fractal Dimensions, and Micromixing. Physical Review Letters, 1994, 73, 252-255.	2.9	35
42	â€˜Effervescentâ€™ atomization in two dimensions. Journal of Fluid Mechanics, 2013, 714, 361-392.	1.4	32
43	The viscous Savart sheet. Journal of Fluid Mechanics, 2013, 730, 607-625.	1.4	31
44	Radial Cracks in Perforated Thin Sheets. Physical Review Letters, 2010, 104, 175502.	2.9	30
45	Drop fragmentation by laser-pulse impact. Journal of Fluid Mechanics, 2020, 893, .	1.4	30
46	Submicron drops from flapping bursting bubbles. Proceedings of the National Academy of Sciences of the United States of America, 2022, 119, .	3.3	29
47	The formation of filamentary structures from molten silicates: PeleÊ¼s hair, angel hair, and blown clinker. Comptes Rendus - Mecanique, 2012, 340, 555-564.	2.1	28
48	On the Physics of Jet Diffusion Flames. Combustion Science and Technology, 1992, 84, 279-294.	1.2	25
49	Coarse Grained Scale of Turbulent Mixtures. Physical Review Letters, 2006, 97, 144506.	2.9	25
50	Geometry and fragmentation of soft brittle impacted bodies. Soft Matter, 2013, 9, 8162.	1.2	25
51	Dense spray evaporation as a mixing process. Physical Review Fluids, 2016, 1, .	1.0	25
52	Fine structure of the vapor field in evaporating dense sprays. Physical Review Fluids, 2017, 2, .	1.0	24
53	Superdiffusive trajectories in Brownian motion. Physical Review E, 2013, 87, 020105.	0.8	23
54	Transient Surface Tension of an Expanding Liquid Sheet. Journal of Colloid and Interface Science, 2000, 230, 29-40.	5.0	22

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55	Explosive fragmentation of liquid shells. Journal of Fluid Mechanics, 2016, 788, 246-273.	1.4	22
56	Rubber band recoil. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2007, 463, 641-658.	1.0	21
57	Impacts on thin elastic sheets. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2009, 465, 823-842.	1.0	21
58	On two-dimensional foam ageing. Journal of Fluid Mechanics, 2011, 673, 147-179.	1.4	21
59	The destabilization of an initially thick liquid sheet edge. Physics of Fluids, 2011, 23, .	1.6	21
60	On the cusps bordering liquid sheets. Journal of Fluid Mechanics, 2014, 754, .	1.4	19
61	The distribution of raindrops speeds. Geophysical Research Letters, 2011, 38, n/a-n/a.	1.5	18
62	Scalar gradients in stirred mixtures and the deconstruction of random fields. Journal of Fluid Mechanics, 2017, 812, 578-610.	1.4	18
63	Stretching and mixing in sheared particulateÂsuspensions. Journal of Fluid Mechanics, 2017, 812, 611-635.	1.4	18
64	Laboratory model for plastic fragmentation in the turbulent ocean. Physical Review Fluids, 2021, 6, .	1.0	18
65	On Dissipation in Stirred Mixtures. Advances in Applied Mechanics, 2012, 45, 91-107.	1.4	17
66	Pulsed dynamics of fountains. Nature, 1994, 371, 24-25.	13.7	16
67	Persistency of material element deformation in isotropic flows and growth rate of lines and surfaces. European Physical Journal B, 2000, 18, 353-361.	0.6	16
68	Chaotic advection at large PÃ©clet number: Electromagnetically driven experiments, numerical simulations, and theoretical predictions. Physics of Fluids, 2014, 26, .	1.6	16
69	Controlling fracture cascades through twisting and quenching. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 8665-8670.	3.3	16
70	Destabilization of flapping sheets: The surprising analogue of soap films. Comptes Rendus - Mecanique, 2009, 337, 469-480.	2.1	15
71	Direct Self-Sustained Fragmentation Cascade of Reactive Droplets. Physical Review Letters, 2017, 118, 074502.	2.9	15
72	Size distribution of raindrops. Nature Physics, 2010, 6, 232-232.	6.5	14

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73	Crumpled water bells. Journal of Fluid Mechanics, 2012, 693, 508-540.	1.4	14
74	Scalar mixtures in porous media. Physical Review Fluids, 2017, 2, .	1.0	14
75	Capillary jet breakup by noise amplification. Journal of Fluid Mechanics, 2017, 810, 281-306.	1.4	13
76	Entanglement Rules for Random Mixtures. Physical Review Letters, 2010, 105, 034504.	2.9	12
77	Double threshold behavior for breakup of liquid sheets. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 18912-18914.	3.3	12
78	Chemical reaction for mixing studies. Physical Review Fluids, 2021, 6, .	1.0	12
79	The diffusive sheet method for scalar mixing. Journal of Fluid Mechanics, 2018, 837, 230-257.	1.4	11
80	Unifying ideas on mixing and atomization. New Journal of Physics, 2004, 6, 125-125.	1.2	10
81	Luminescence from Collapsing Centimeter Bubbles Expanded by Chemical Reaction. Physical Review Letters, 2015, 115, 094501.	2.9	10
82	Fragmentation as an aggregation process. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2015, 471, 20150678.	1.0	10
83	Interface dynamics, pole trajectories, and cell size statistics. Physical Review E, 2018, 98, .	0.8	10
84	â€˜Finesâ€™ from the collision of liquid rims. Journal of Fluid Mechanics, 2020, 893, .	1.4	10
85	Mode Coarsening or Fracture: Energy Transfer Mechanisms in Dynamic Buckling of Rods. Physical Review Letters, 2021, 126, 045501.	2.9	8
86	Comparison of Lagrangian and Eulerian frames of passive scalar turbulent mixing. Physical Review Fluids, 2019, 4, .	1.0	7
87	Chemical reactions rectify mixtures composition. Physical Review Fluids, 2021, 6, .	1.0	7
88	Fragmentation as an aggregation process: the role of defects. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2016, 472, 20150679.	1.0	5
89	Self-activated fragmentation. International Journal of Fracture, 2017, 206, 171-193.	1.1	5
90	Node dynamics and cusps size distribution at the border of liquid sheets. Physical Review Fluids, 2016, 1, .	1.0	5

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91	Self-similar impulsive capillary waves on a ligament. Physics of Fluids, 2015, 27, .	1.6	4
92	Simple ideas on mixing and fragmentation. Chaos, 2004, 14, 924-932.	1.0	3
93	Chemical production on a deforming substrate. Journal of Fluid Mechanics, 2022, 934, .	1.4	3
94	Hesitant Nature. Journal of Fluid Mechanics, 2009, 636, 1-4.	1.4	2
95	On shapes and forms: Population balance dynamics of corrugated stirred fronts. Comptes Rendus Physique, 2018, 19, 306-315.	0.3	2
96	A brittle material with tunable elasticity: CrÃªpe paper. Comptes Rendus - Mecanique, 2019, 347, 382-388.	2.1	2
97	On random search: Collection kinetics of <i>Paramecia</i> into a trap embedded in a closed domain. American Journal of Physics, 2010, 78, 574-579.	0.3	1
98	Equilibrated crater: fragmentation and mixing. Journal of Fluid Mechanics, 2022, 942, .	1.4	1
99	â€˜Finesâ€™ from the collision of liquid rims â€“ ERRATUM. Journal of Fluid Mechanics, 2020, 894, .	1.4	0
100	Architecture of a self-fragmenting droplets cascade. Physical Review E, 2021, 104, L053101.	0.8	0