

Emmanuel Villermaux

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96
papers

5,886
citations

35
h-index

76
g-index

102
ext. papers

6,868
ext. citations

5.8
avg. IF

6.45
L-index

#	Paper	IF	Citations
96	Physics of liquid jets. <i>Reports on Progress in Physics</i> , 2008 , 71, 036601	14.4	1152
95	'Infotaxis' as a strategy for searching without gradients. <i>Nature</i> , 2007 , 445, 406-9	50.4	479
94	On spray formation. <i>Journal of Fluid Mechanics</i> , 2004 , 498, 73-111	3.7	421
93	Break-up and atomization of a round water jet by a high-speed annular air jet. <i>Journal of Fluid Mechanics</i> , 1998 , 357, 351-379	3.7	258
92	Fragmentation. <i>Annual Review of Fluid Mechanics</i> , 2007 , 39, 419-446	22	255
91	Single-drop fragmentation determines size distribution of raindrops. <i>Nature Physics</i> , 2009 , 5, 697-702	16.2	226
90	Flow regimes of large-velocity-ratio coaxial jets. <i>Journal of Fluid Mechanics</i> , 1997 , 345, 357-381	3.7	161
89	Bursting bubble aerosols. <i>Journal of Fluid Mechanics</i> , 2012 , 696, 5-44	3.7	154
88	Drop fragmentation on impact. <i>Journal of Fluid Mechanics</i> , 2011 , 668, 412-435	3.7	128
87	Atomization by jet impact. <i>Journal of Fluid Mechanics</i> , 2006 , 549, 273	3.7	124
86	Life of a flapping liquid sheet. <i>Journal of Fluid Mechanics</i> , 2002 , 462, 341-363	3.7	106
85	Mixing in coaxial jets. <i>Journal of Fluid Mechanics</i> , 2000 , 425, 161-185	3.7	102
84	Ligament-mediated spray formation. <i>Physical Review Letters</i> , 2004 , 92, 074501	7.4	99
83	Stretching, coalescence, and mixing in porous media. <i>Physical Review Letters</i> , 2013 , 110, 204501	7.4	95
82	Mixing as an aggregation process. <i>Physical Review Letters</i> , 2003 , 91, 184501	7.4	86
81	How vortices mix. <i>Journal of Fluid Mechanics</i> , 2003 , 476, 213-222	3.7	85
80	Memory-induced low frequency oscillations in closed convection boxes. <i>Physical Review Letters</i> , 1995 , 75, 4618-4621	7.4	84

79	Life of a smooth liquid sheet. <i>Journal of Fluid Mechanics</i> , 2002 , 462, 307-340	3.7	81
78	Short-term dynamics of a density interface following an impact. <i>Journal of Fluid Mechanics</i> , 2007 , 577, 241-250	3.7	75
77	The lamellar description of mixing in porous media. <i>Journal of Fluid Mechanics</i> , 2015 , 770, 458-498	3.7	72
76	Fragmentation of stretched liquid ligaments. <i>Physics of Fluids</i> , 2004 , 16, 2732-2741	4.4	71
75	Mixing and Spray Formation in Coaxial Jets. <i>Journal of Propulsion and Power</i> , 1998 , 14, 807-817	1.8	70
74	Atomization of undulating liquid sheets. <i>Journal of Fluid Mechanics</i> , 2007 , 585, 421-456	3.7	69
73	Dynamic buckling and fragmentation in brittle rods. <i>Physical Review Letters</i> , 2005 , 94, 035503	7.4	63
72	Mixing by random stirring in confined mixtures. <i>Journal of Fluid Mechanics</i> , 2008 , 617, 51-86	3.7	62
71	On the geometry of turbulent mixing. <i>Journal of Fluid Mechanics</i> , 1999 , 393, 123-147	3.7	54
70	Drop Shaping by Laser-Pulse Impact. <i>Physical Review Applied</i> , 2015 , 3,	4.3	52
69	Odor Landscapes in Turbulent Environments. <i>Physical Review X</i> , 2014 , 4,	9.1	52
68	Mixing Versus Stirring. <i>Annual Review of Fluid Mechanics</i> , 2019 , 51, 245-273	22	52
67	Ageing and burst of surface bubbles. <i>Journal of Fluid Mechanics</i> , 2018 , 851, 636-671	3.7	51
66	Two hundred years of capillarity research. <i>Physics Today</i> , 2006 , 59, 39-44	0.9	51
65	The diffusive strip method for scalar mixing in two dimensions. <i>Journal of Fluid Mechanics</i> , 2010 , 662, 134-172	3.7	47
64	Bursting thin liquid films. <i>Journal of Fluid Mechanics</i> , 2005 , 524, 121-130	3.7	47
63	Bridging kinematics and concentration content in a chaotic micromixer. <i>Physical Review E</i> , 2008 , 77, 015304	3.4	42
62	On the role of viscosity in shear instabilities. <i>Physics of Fluids</i> , 1998 , 10, 368-373	4.4	37

61	Fragmentation versus Cohesion. <i>Journal of Fluid Mechanics</i> , 2020 , 898,	3.7	35
60	Mixing by porous media. <i>Comptes Rendus - Mecanique</i> , 2012 , 340, 933-943	2.1	35
59	The spontaneous puncture of thick liquid films. <i>Journal of Fluid Mechanics</i> , 2018 , 838, 192-221	3.7	34
58	Soap films burst like flapping flags. <i>Physical Review Letters</i> , 2009 , 103, 054501	7.4	34
57	Drop deformation by laser-pulse impact. <i>Journal of Fluid Mechanics</i> , 2016 , 794, 676-699	3.7	33
56	Line dispersion in homogeneous turbulence: Stretching, fractal dimensions, and micromixing. <i>Physical Review Letters</i> , 1994 , 73, 252-255	7.4	30
55	Effervescent atomization in two dimensions. <i>Journal of Fluid Mechanics</i> , 2013 , 714, 361-392	3.7	28
54	The viscous Savart sheet. <i>Journal of Fluid Mechanics</i> , 2013 , 730, 607-625	3.7	25
53	The formation of filamentary structures from molten silicates: Pele's hair, angel hair, and blown cliner. <i>Comptes Rendus - Mecanique</i> , 2012 , 340, 555-564	2.1	23
52	Radial cracks in perforated thin sheets. <i>Physical Review Letters</i> , 2010 , 104, 175502	7.4	23
51	Coarse grained scale of turbulent mixtures. <i>Physical Review Letters</i> , 2006 , 97, 144506	7.4	23
50	Geometry and fragmentation of soft brittle impacted bodies. <i>Soft Matter</i> , 2013 , 9, 8162	3.6	21
49	Transient Surface Tension of an Expanding Liquid Sheet. <i>Journal of Colloid and Interface Science</i> , 2000 , 230, 29-40	9.3	21
48	Impacts on thin elastic sheets. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2009 , 465, 823-842	2.4	20
47	Superdiffusive trajectories in Brownian motion. <i>Physical Review E</i> , 2013 , 87, 020105	2.4	19
46	Rubber band recoil. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2007 , 463, 641-658	2.4	18
45	On the Physics of Jet Diffusion Flames. <i>Combustion Science and Technology</i> , 1992 , 84, 279-294	1.5	18
44	On two-dimensional foam ageing. <i>Journal of Fluid Mechanics</i> , 2011 , 673, 147-179	3.7	17

43	On the cusps bordering liquid sheets. <i>Journal of Fluid Mechanics</i> , 2014 , 754,	3.7	16
42	The destabilization of an initially thick liquid sheet edge. <i>Physics of Fluids</i> , 2011 , 23, 091705	4.4	16
41	Dense spray evaporation as a mixing process. <i>Physical Review Fluids</i> , 2016 , 1,	2.8	16
40	Explosive fragmentation of liquid shells. <i>Journal of Fluid Mechanics</i> , 2016 , 788, 246-273	3.7	16
39	Stretching and mixing in sheared particulate suspensions. <i>Journal of Fluid Mechanics</i> , 2017 , 812, 611-635	3.7	15
38	Destabilization of flapping sheets: The surprising analogue of soap films. <i>Comptes Rendus - Mecanique</i> , 2009 , 337, 469-480	2.1	14
37	Persistency of material element deformation in isotropic flows and growth rate of lines and surfaces. <i>European Physical Journal B</i> , 2000 , 18, 353-361	1.2	14
36	Fine structure of the vapor field in evaporating dense sprays. <i>Physical Review Fluids</i> , 2017 , 2,	2.8	14
35	Crumpled water bells. <i>Journal of Fluid Mechanics</i> , 2012 , 693, 508-540	3.7	13
34	On Dissipation in Stirred Mixtures. <i>Advances in Applied Mechanics</i> , 2012 , 45, 91-107	10	13
33	Pulsed dynamics of fountains. <i>Nature</i> , 1994 , 371, 24-25	50.4	13
32	Scalar gradients in stirred mixtures and the deconstruction of random fields. <i>Journal of Fluid Mechanics</i> , 2017 , 812, 578-610	3.7	12
31	Chaotic advection at large Péclet number: Electromagnetically driven experiments, numerical simulations, and theoretical predictions. <i>Physics of Fluids</i> , 2014 , 26, 013601	4.4	11
30	The distribution of raindrops speeds. <i>Geophysical Research Letters</i> , 2011 , 38, n/a-n/a	4.9	11
29	Capillary jet breakup by noise amplification. <i>Journal of Fluid Mechanics</i> , 2017 , 810, 281-306	3.7	10
28	Drop fragmentation by laser-pulse impact. <i>Journal of Fluid Mechanics</i> , 2020 , 893,	3.7	10
27	Fragmentation as an aggregation process. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2015 , 471, 20150678	2.4	9
26	Unifying ideas on mixing and atomization. <i>New Journal of Physics</i> , 2004 , 6, 125-125	2.9	9

25	Direct Self-Sustained Fragmentation Cascade of Reactive Droplets. <i>Physical Review Letters</i> , 2017 , 118, 074502	7.4	8
24	The diffusive sheet method for scalar mixing. <i>Journal of Fluid Mechanics</i> , 2018 , 837, 230-257	3.7	8
23	Controlling fracture cascades through twisting and quenching. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2018 , 115, 8665-8670	11.5	8
22	Size distribution of raindrops. <i>Nature Physics</i> , 2010 , 6, 232-232	16.2	8
21	Entanglement rules for random mixtures. <i>Physical Review Letters</i> , 2010 , 105, 034504	7.4	8
20	Scalar mixtures in porous media. <i>Physical Review Fluids</i> , 2017 , 2,	2.8	8
19	Interface dynamics, pole trajectories, and cell size statistics. <i>Physical Review E</i> , 2018 , 98,	2.4	8
18	Luminescence from Collapsing Centimeter Bubbles Expanded by Chemical Reaction. <i>Physical Review Letters</i> , 2015 , 115, 094501	7.4	7
17	Laboratory model for plastic fragmentation in the turbulent ocean. <i>Physical Review Fluids</i> , 2021 , 6,	2.8	6
16	Self-activated fragmentation. <i>International Journal of Fracture</i> , 2017 , 206, 171-193	2.3	5
15	Fragmentation as an aggregation process: the role of defects. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2016 , 472, 20150679	2.4	5
14	Node dynamics and cusps size distribution at the border of liquid sheets. <i>Physical Review Fluids</i> , 2016 , 1,	2.8	5
13	Self-similar impulsive capillary waves on a ligament. <i>Physics of Fluids</i> , 2015 , 27, 051704	4.4	4
12	Chemical reaction for mixing studies. <i>Physical Review Fluids</i> , 2021 , 6,	2.8	4
11	Simple ideas on mixing and fragmentation. <i>Chaos</i> , 2004 , 14, 924-32	3.3	3
10	Comparison of Lagrangian and Eulerian frames of passive scalar turbulent mixing. <i>Physical Review Fluids</i> , 2019 , 4,	2.8	3
9	Mode Coarsening or Fracture: Energy Transfer Mechanisms in Dynamic Buckling of Rods. <i>Physical Review Letters</i> , 2021 , 126, 045501	7.4	3
8	Hesitant Nature. <i>Journal of Fluid Mechanics</i> , 2009 , 636, 1-4	3.7	2

- 7 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 11.5 2
- 6 Bines from the collision of liquid rims. *Journal of Fluid Mechanics*, **2020**, 893, 3-7 2
- 5 A brittle material with tunable elasticity: Crêpe paper. *Comptes Rendus - Mécanique*, **2019**, 347, 382-388 2.1 1
- 4 On random search: Collection kinetics of Paramecia into a trap embedded in a closed domain. *American Journal of Physics*, **2010**, 78, 574-579 0.7 1
- 3 Chemical reactions rectify mixtures composition. *Physical Review Fluids*, **2021**, 6, 2.8 1
- 2 On shapes and forms: Population balance dynamics of corrugated stirred fronts. *Comptes Rendus Physique*, **2018**, 19, 306-315 1.4 1
- 1 Architecture of a self-fragmenting droplets cascade.. *Physical Review E*, **2021**, 104, L053101 2.4