Francois Gallaire

List of Publications by Citations

99 papers	2,407 citations	22 h-index	46 g-index
112 ext. papers	2,936 ext. citations	4.1 avg, IF	5.55 L-index

#	Paper	IF	Citations
99	Dynamics of microfluidic droplets. *Lab on A Chip*, **2010**, 10, 2032-45	7.2	691
98	Spiral vortex breakdown as a global mode. *Journal of Fluid Mechanics*, **2006**, 549, 71	3.7	107
97	Mode selection in swirling jet experiments: a linear stability analysis. *Journal of Fluid Mechanics*, **2003**, 494, 223-253	3.7	107
96	Global two-dimensional stability measures of the flat plate boundary-layer flow. *European Journal of Mechanics, B/Fluids*, **2008**, 27, 501-513	2.4	89
95	Linear stability analysis of wind turbine wakes performed on wind tunnel measurements. *Journal of Fluid Mechanics*, **2013**, 737, 499-526	3.7	76
94	Prediction of the hub vortex instability in a wind turbine wake: stability analysis with eddy-viscosity models calibrated on wind tunnel data. *Journal of Fluid Mechanics*, **2014**, 750,	3.7	68
93	A weakly nonlinear mechanism for mode selection in swirling jets. *Journal of Fluid Mechanics*, **2012**, 699, 216-262	3.7	59
92	Generalized Rayleigh criterion for non-axisymmetric centrifugal instabilities. *Journal of Fluid Mechanics*, **2005**, 542, 365	3.7	59
91	Self-consistent mean flow description of the nonlinear saturation of the vortex shedding in the cylinder wake. *Physical Review Letters*, **2014**, 113, 084501	7.4	56
90	Fabrication of slender elastic shells by the coating of curved surfaces. *Nature Communications*, **2016** , 7, 11155	17.4	54
89	Quantitative analysis of the dripping and jetting regimes in co-flowing capillary jets. *Physics of Fluids*, **2011**, 23, 094111	4.4	51
88	Fluid dynamic instabilities: theory and application to pattern forming in complex media. *Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences*, **2017**, 375,	3	43
87	Inkjet Printing of Viscous Monodisperse Microdroplets by Laser-Induced Flow Focusing. *Physical Review Applied*, **2016**, 6,	4.3	40
86	The role of boundary conditions in a simple model of incipient vortex breakdown. *Physics of Fluids*, **2004**, 16, 274-286	4.4	37
85	Part Load Vortex Rope as a Global Unstable Mode. *Journal of Fluids Engineering, Transactions of the ASME*, **2017**, 139,	2.1	36
84	Sensitivity of aerodynamic forces in laminar and turbulent flow past a square cylinder. *Physics of Fluids*, **2014**, 26, 104101	4.4	30
83	Origin of the synchronous pressure fluctuations in the draft tube of Francis turbines operating at part load conditions. *Journal of Fluids and Structures*, **2019**, 86, 13-33	3.1	28

82	A pancake droplet translating in a Hele-Shaw cell: lubrication film and flow field. *Journal of Fluid Mechanics*, **2016**, 798, 955-969	3.7	27
81	Vortex-Breakdown-Induced Particle Capture in Branching Junctions. *Physical Review Letters*, **2016**, 117, 084501	7.4	26
80	Origin and role of the cerebrospinal fluid bidirectional flow in the central canal. *ELife*, **2020**, 9,	8.9	26
79	Boundary elements method for microfluidic two-phase flows in shallow channels. *Computers and Fluids*, **2015**, 107, 272-284	2.8	25
78	Physics of Bubble-Propelled Microrockets. *Advanced Functional Materials*, **2018**, 28, 1800686	15.6	25
77	Inertial manipulation of bubbles in rectangular microfluidic channels. *Lab on A Chip*, **2018**, 18, 1035-1046	7.2	22
76	Viscous Taylor droplets in axisymmetric and planar tubes: from Bretherton theory to empirical models. *Microfluidics and Nanofluidics*, **2018**, 22, 1	2.8	22
75	Marangoni induced force on a drop in a Hele Shaw cell. *Physics of Fluids*, **2014**, 26, 062105	4.4	22
74	Rayleigh-Taylor instability under an inclined plane. *Physics of Fluids*, **2015**, 27, 084107	4.4	22
73	A self-consistent model for the saturation dynamics of the vortex shedding around the mean flow in the unstable cylinder wake. *Physics of Fluids*, **2015**, 27, 074103	4.4	21
72	Sensitivity and open-loop control of stochastic response in a noise amplifier flow: the backward-facing step. *Journal of Fluid Mechanics*, **2015**, 762, 361-392	3.7	20
71	Closed-loop control of vortex breakdown: a model study. *Journal of Fluid Mechanics*, **2004**, 511, 67-93	3.7	20
70	Hub vortex instability within wind turbine wakes: Effects of wind turbulence, loading conditions, and blade aerodynamics. *Physical Review Fluids*, **2016**, 1,	2.8	19
69	A numerical study of droplet trapping in microfluidic devices. *Physics of Fluids*, **2014**, 26, 032002	4.4	18
68	A new prediction of wavelength selection in radial viscous fingering involving normal and tangential stresses. *Physics of Fluids*, **2013**, 25, 124107	4.4	18
67	Suppression of von Kármán vortex streets past porous rectangular cylinders. *Physical Review Fluids*, **2018**, 3,	2.8	18
66	Dynamics of falling films on the outside of a vertical rotating cylinder: waves, rivulets and dripping transitions. *Journal of Fluid Mechanics*, **2017**, 832, 189-211	3.7	17
65	Mode selection in trailing vortices: harmonic response of the non-parallel Batchelor vortex. *Journal of Fluid Mechanics*, **2016**, 790, 523-552	3.7	17

64	Controlled reattachment in separated flows: a variational approach to recirculation length reduction. *Journal of Fluid Mechanics*, **2014**, 742, 618-635	3.7	16
63	Open-loop control of noise amplification in a separated boundary layer flow. *Physics of Fluids*, **2013**, 25, 124106	4.4	15
62	Control of axisymmetric vortex breakdown in a constricted pipe: Nonlinear steady states and weakly nonlinear asymptotic expansions. *Physics of Fluids*, **2011**, 23, 084102	4.4	15
61	The influence of shear layer thickness on the stability of confined two-dimensional wakes. *Physics of Fluids*, **2011**, 23, 034103	4.4	15
60	Ultralow Interfacial Tension Measurement through Jetting/Dripping Transition. *Langmuir*, **2017**, 33, 2531-2540	4	14
59	A self-consistent formulation for the sensitivity analysis of finite-amplitude vortex shedding in the cylinder wake. *Journal of Fluid Mechanics*, **2016**, 800, 327-357	3.7	13
58	Self-consistent model for the saturation mechanism of the response to harmonic forcing in the backward-facing step flow. *Journal of Fluid Mechanics*, **2016**, 793, 777-797	3.7	13
57	Bifurcation Dynamics of a Particle-Encapsulating Droplet in Shear Flow. *Physical Review Letters*, **2017**, 119, 064502	7.4	12
56	Foam on troubled water: Capillary induced finite-time arrest of sloshing waves. *Physics of Fluids*, **2016**, 28, 091701	4.4	12
55	Optimal Control of Part Load Vortex Rope in Francis Turbines. *Journal of Fluids Engineering, Transactions of the ASME*, **2019**, 141,	2.1	11
54	Three-dimensional Rayleigh–Taylor instability under a unidirectional curved substrate. *Journal of Fluid Mechanics*, **2018**, 837, 19-47	3.7	11
53	Obstacle-induced spiral vortex breakdown. *Experiments in Fluids*, **2014**, 55, 1	2.5	11
52	Rayleigh-Taylor instability under curved substrates: An optimal transient growth analysis. *Physical Review Fluids*, **2016**, 1,	2.8	11
51	Flow dynamics of a dandelion pappus: A linear stability approach. *Physical Review Fluids*, **2019**, 4,	2.8	11
50	Predictive control of spiral vortex breakdown. *Journal of Fluid Mechanics*, **2018**, 842, 58-86	3.7	10
49	Prediction of two-dimensional dripping onset of a liquid film under an inclined plane. *International Journal of Multiphase Flow*, **2018**, 104, 286-293	3.6	10
48	Second-order sensitivity of parallel shear flows and optimal spanwise-periodic flow modifications. *Journal of Fluid Mechanics*, **2015**, 782, 491-514	3.7	10
47	A unified criterion for the centrifugal instabilities of vortices and swirling jets. *Journal of Fluid Mechanics*, **2013**, 734, 5-35	3.7	10

46	Transport of flexible fibers in confined microchannels. *Physical Review Fluids*, **2019**, 4,	2.8	10
45	Oscillations of confined fibres transported in microchannels. *Journal of Fluid Mechanics*, **2018**, 835, 444-470	3.7	10
44	Instability of a thin viscous film flowing under an inclined substrate: steady patterns. *Journal of Fluid Mechanics*, **2020**, 898,	3.7	8
43	Rayleigh-Taylor instability under a spherical substrate. *Physical Review Fluids*, **2018**, 3,	2.8	8
42	The stability of a rising droplet: an inertialess non-modal growth mechanism. *Journal of Fluid Mechanics*, **2016**, 786,	3.7	8
41	Spatio-temporal stability of the K□rm□ vortex street and the effect of confinement. *Journal of Fluid Mechanics*, **2016**, 795, 187-209	3.7	8
40	Capillary hysteresis in sloshing dynamics: a weakly nonlinear analysis. *Journal of Fluid Mechanics*, **2018**, 837, 788-818	3.7	7
39	Theoretical framework to analyze the combined effect of surface tension and viscosity on the damping rate of sloshing waves. *Physical Review Fluids*, **2018**, 3,	2.8	7
38	Feedback-free microfluidic oscillator with impinging jets. *Physical Review Fluids*, **2020**, 5,	2.8	7
37	Environmental Control of Amyloid Polymorphism by Modulation of Hydrodynamic Stress. *ACS Nano* , **2021**, 15, 944-953	16.7	7
36	Unraveling radial dependency effects in fiber thermal drawing. *Applied Physics Letters*, **2019**, 115, 044102	3.4	6
35	Second-order sensitivity in the cylinder wake: Optimal spanwise-periodic wall actuation and wall deformation. *Physical Review Fluids*, **2019**, 4,	2.8	6
34	Film thickness distribution in gravity-driven pancake-shaped droplets rising in a Hele-Shaw cell. *Journal of Fluid Mechanics*, **2019**, 874, 1021-1040	3.7	5
33	Manipulating flow separation: sensitivity of stagnation points, separatrix angles and recirculation area to steady actuation. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2014**, 470, 20140365	2.4	5
32	Edge states control droplet breakup in subcritical extensional flows. *Physical Review Fluids*, **2018**, 3,	2.8	5
31	Hydrodynamic loading of perforated disks in creeping flows. *Physical Review Fluids*, **2019**, 4,	2.8	5
30	Dripping down the rivulet. *Physical Review Fluids*, **2019**, 4,	2.8	5
29	Deformation of porous flexible strip in low and moderate Reynolds number flows. *Physical Review Fluids*, **2020**, 5,	2.8	5

28	Viscous growth and rebound of a bubble near a rigid surface. *Journal of Fluid Mechanics*, **2019**, 860, 172-199	3.7	5
27	Fingering instability on curved substrates: optimal initial film and substrate perturbations. *Journal of Fluid Mechanics*, **2019**, 868, 726-761	3.7	4
26	Sloshing in a Hele-Shaw cell: experiments and theory. *Journal of Fluid Mechanics*, **2017**, 831,	3.7	3
25	The Hydrodynamics of a Micro-Rocket Propelled by a Deformable Bubble. *Fluids*, **2019**, 4, 48	1.6	3
24	Transition from Exponentially Damped to Finite-Time Arrest Liquid Oscillations Induced by Contact Line Hysteresis. *Physical Review Letters*, **2020**, 124, 104502	7.4	3
23	Effective stress jump across membranes. *Journal of Fluid Mechanics*, **2020**, 892,	3.7	3
22	Saturation of the response to stochastic forcing in two-dimensional backward-facing step flow: A self-consistent approximation. *Physical Review Fluids*, **2016**, 1,	2.8	3
21	Particle size selection in capillary instability of locally heated coaxial fiber. *Physical Review Fluids*, **2019**, 4,	2.8	3
20	Instability of a thin viscous film flowing under an inclined substrate: the emergence and stability of rivulets. *Journal of Fluid Mechanics*, **2020**, 904,	3.7	3
19	Impinging planar jets: hysteretic behaviour and origin of the self-sustained oscillations. *Journal of Fluid Mechanics*, **2021**, 913,	3.7	3
18	Onset of chaos in helical vortex breakdown at low Reynolds number. *Physical Review Fluids*, **2018**, 3,	2.8	2
17	The influence of the entry region on the instability of a coflowing injector device. *Journal of Physics Condensed Matter*, **2018**, 30, 284003	1.8	2
16	Flow control of weakly non-parallel flows: application to trailing vortices. *Journal of Fluid Mechanics* , **2017**, 822, 342-363	3.7	1
15	Self-consistent triple decomposition of the turbulent flow over a backward-facing step under finite amplitude harmonic forcing. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2019**, 475, 20190018	2.4	1
14	Frequency selection in a gravitationally stretched capillary jet in the jetting regime. *Journal of Fluid Mechanics*, **2020**, 894,	3.7	1
13	Beer tapping: dynamics of bubbles after impact. *Journal of Physics: Conference Series*, **2015**, 656, 012029	0.3	1
12	Absolute/convective secondary instabilities and the role of confinement in free shear layers. *Physical Review Fluids*, **2018**, 3,	2.8	1
11	Swinging jets. *Physical Review Fluids*, **2020**, 5,	2.8	1

10	Optimal spanwise-periodic control for recirculation length in a backward-facing step flow. *Physical Review Fluids*, **2020**, 5,	2.8	1
9	Influence of the inlet velocity profile on the flow stability in a symmetric channel expansion. *Journal of Fluid Mechanics*, **2021**, 909,	3.7	1
8	Everything in its right place: controlling the local composition of hydrogels using microfluidic traps. *Lab on A Chip*, **2020**, 20, 4572-4581	7.2	1
7	Hydrodynamic-driven morphogenesis of karst draperies: spatio-temporal analysis of the two-dimensional impulse response. *Journal of Fluid Mechanics*, **2021**, 910,	3.7	1
6	Homogenization-based design of microstructured membranes: wake flows past permeable shells. *Journal of Fluid Mechanics*, **2021**, 927,	3.7	1
5	On the effect of a penetrating recirculation region on the bifurcations of the flow past a permeable sphere. *Physics of Fluids*, **2021**, 33, 124103	4.4	1
4	Drops on the Underside of a Slightly Inclined Wet Substrate Move Too Fast to Grow. *Physical Review Letters*, **2021**, 127, 044503	7.4	0
3	Secondary instability in thin film flows under an inclined plane: growth of lenses on spatially developing rivulets. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2021**, 477, 20210291	2.4	0
2	Relaxation of capillary-gravity waves due to contact line nonlinearity: A projection method.. *Chaos*, **2021**, 31, 123124	3.3	0
1	The motion of a 2D pendulum in a channel subjected to an incoming flow. *Journal of Fluid Mechanics*, **2015**, 764, 5-25	3.7	