G J F Van Heijst

List of Publications by Year
in descending order

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153 papers	4,147 citations	101496 36 h-index	149623 56 g-index
156 all docs	156 docs citations	156 times ranked	1848 citing authors

#	Article	IF	Citations
1	The Okuboâ€“Weiss criterion in hydrodynamic flows: geometric aspects and further extension. Fluid Dynamics Research, 2022, 54, 015505.	0.6	1
2	High-resolution single-camera photogrammetry: incorporation of refraction at a fluid interface. Experiments in Fluids, 2020, 61, 1.	1.1	3
3	Wavelength selection of vortex ripples in an oscillating cylinder: The effect of curvature and background rotation. Physical Review E, 2019, 99, 033105.	0.8	0
4	The effect of an urban park on the microclimate in its vicinity: a case study for Antwerp, Belgium. International Journal of Climatology, 2018, 38, e303.	1.5	48
5	Extreme Small-Scale Clustering of Droplets in Turbulence Driven by Hydrodynamic Interactions. Physical Review Letters, 2018, 120, 244504.	2.9	20
6	PIV measurements of isothermal plane turbulent impinging jets at moderate Reynolds numbers. Experiments in Fluids, 2017, 58, 1.	1.1	27
7	Dissipation of coherent structures in confined two-dimensional turbulence. Physics of Fluids, 2017, 29, 111103.	1.6	18
8	Effect of microbubble-induced cavitation on the dispersion of sprays. Physical Review Fluids, 2017, 2, .	1.0	2
9	PHOSPHORESCENT FLOW TRACKING FOR QUANTITATIVE MEASUREMENTS OF LIQUID SPRAY DISPERSION. Atomization and Sprays, 2016, 26, 219-233.	0.3	5
10	Lanthanide-based laser-induced phosphorescence for spray diagnostics. Review of Scientific Instruments, 2016, 87, 033702.	0.6	3
11	Decreasing luminescence lifetime of evaporating phosphorescent droplets. Applied Physics Letters, 2016, 109, 234103.	1.5	0
12	Interaction of monopoles, dipoles, and turbulence with a shear flow. Physics of Fluids, 2016, 28, 093603.	1.6	7
13	The maximum sustainable heat flux in stably stratified channel flows. Quarterly Journal of the Royal Meteorological Society, 2016, 142, 781-792.	1.0	9
14	Collapse of turbulence in stably stratified channel flow: a transient phenomenon. Quarterly Journal of the Royal Meteorological Society, 2015, 141, 2137-2147.	1.0	30
15	Shallow flows: 2D or not 2D?. Environmental Fluid Mechanics, 2014, 14, 945-956.	0.7	5
16	On the suitability of steady RANS CFD for forced mixing ventilation at transitional slot Reynolds numbers. Indoor Air, 2013, 23, 236-249.	2.0	47
17	Experimental stabilisation of 2D vortex patterns using time-dependent forcing. Europhysics Letters, 2013, 104, 24003.	0.7	2
18	Lyapunov-stability of solution branches of rotating disk flow. Physics of Fluids, 2013, 25, 073602.	1.6	8

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19	The theory of a metal-insulator transition at zero temperature and features of the dielectric function in the Coulomb model of matter. High Temperature, 2013, 51, 457-464.	0.1	5
20	Vortex dipole collision with a sliding wall. Fluid Dynamics Research, 2013, 45, 045501.	0.6	6
21	The structure of sidewall boundary layers in confined rotating Rayleighâ€“BÃ©nard convection. Journal of Fluid Mechanics, 2013, 727, 509-532.	1.4	25
22	Preferential states of rotating turbulent flows in a square container with a step topography. Physics of Fluids, 2013, 25, .	1.6	2
23	Boundary layer development in the flow field between a rotating and a stationary disk. Physics of Fluids, 2012, 24, .	1.6	28
24	The break-up of Ekman theory in a flow subjected to background rotation and driven by a non-conservative body force. Physics of Fluids, 2012, 24, .	1.6	3
25	Regimes of two-dimensionality of decaying shallow axisymmetric swirl flows with background rotation. Journal of Fluid Mechanics, 2012, 691, 214-244.	1.4	9
26	PIV measurements of a plane wall jet in a confined space at transitional slot Reynolds numbers. Experiments in Fluids, 2012, 53, 499-517.	1.1	27
27	Horizontal and vertical motions of barotropic vortices over a submarine mountain. Journal of Fluid Mechanics, 2012, 695, 173-198.	1.4	15
28	Large-Eddy Simulation of pollutant dispersion around a cubical building: Analysis of the turbulent mass transport mechanism by unsteady concentration and velocity statistics. Environmental Pollution, 2012, 167, 47-57.	3.7	54
29	Structure-function scaling of bounded two-dimensional turbulence. Physical Review E, 2011, 84, 026310.	0.8	5
30	An experimental study of the effect of external turbulence on the decay of a single vortex and a vortex pair. Journal of Fluid Mechanics, 2011, 670, 214-239.	1.4	17
31	CFD simulation of pollutant dispersion around isolated buildings: On the role of convective and turbulent mass fluxes in the prediction accuracy. Journal of Hazardous Materials, 2011, 194, 422-434.	6.5	125
32	On the Reynolds number scaling of vorticity production at no-slip walls during vortex-wall collisions. Theoretical and Computational Fluid Dynamics, 2011, 25, 293-300.	0.9	8
33	Scaling and asymmetry in an electromagnetically forced dipolar flow structure. Physical Review E, 2011, 83, 016306.	0.8	11
34	Scaling of decaying shallow axisymmetric swirl flows. Journal of Fluid Mechanics, 2010, 648, 471-484.	1.4	12
35	Experiments and simulations on self-organization of confined quasi-two-dimensional turbulent flows with discontinuous topography. Physics of Fluids, 2010, 22, 025101.	1.6	2
36	Laboratory experiments on multipolar vortices in a rotating fluid. Physics of Fluids, 2010, 22, .	1.6	21

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37	Dynamics and structure of decaying shallow dipolar vortices. Physics of Fluids, 2010, 22, .	1.6	18
38	Dynamics of two identical vortices in linear shear. Physics of Fluids, 2010, 22, 117104.	1.6	11
39	Virial theorem for an inhomogeneous medium, boundary conditions for the wave functions, and stress tensor in quantum statistics. Physical Review E, 2010, 82, 010102.	0.8	14
40	Three-dimensional flow in electromagnetically driven shallow two-layer fluids. Physical Review E, 2010, 82, 026314.	0.8	25
41	Kramers-Kronig relations for the dielectric function and the static conductivity of Coulomb systems. Europhysics Letters, 2010, 90, 10003.	0.7	75
42	Two-Dimensional Navierâ€“Stokes Turbulence in Bounded Domains. Applied Mechanics Reviews, 2009, 62, .	4.5	66
43	Experiments on rapidly rotating turbulent flows. Physics of Fluids, 2009, 21, .	1.6	46
44	Inertial oscillations in a confined monopolar vortex subjected to background rotation. Physics of Fluids, 2009, 21, 116602.	1.6	3
45	Meandering streams in a shallow fluid layer. Europhysics Letters, 2009, 85, 54001.	0.7	13
46	The 3D character of decaying turbulence in a shallow fluid layer. Springer Proceedings in Physics, 2009, , 293-296.	0.1	0
47	The minimum-enstrophy principle for decaying 2D turbulence in circular domains. Springer Proceedings in Physics, 2009, , 257-260.	0.1	0
48	Dispersion and Mixing in Quasi-two-dimensional Rotating Flows. , 2008, , 119-136.		0
49	Spontaneous angular momentum generation of two-dimensional fluid flow in an elliptic geometry. Physical Review E, 2008, 78, 036301.	0.8	12
50	The three-dimensional structure of an electromagnetically generated dipolar vortex in a shallow fluid layer. Physics of Fluids, 2008, 20, .	1.6	70
51	On the large-scale structure and spectral dynamics of two-dimensional turbulence in a periodic channel. Physics of Fluids, 2008, 20, 056602.	1.6	4
52	A model for vortical plumes in rotating convection. Physics of Fluids, 2008, 20, .	1.6	23
53	Intrinsic three-dimensionality in electromagnetically driven shallow flows. Europhysics Letters, 2008, 83, 24001.	0.7	47
54	Influence of dilated cardiomyopathy and a left ventricular assist device on vortex dynamics in the left ventricle. Computer Methods in Biomechanics and Biomedical Engineering, 2008, 11, 649-660.	0.9	25

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55	Vorticity dynamics of a dipole colliding with a no-slip wall. Physics of Fluids, 2007, 19, .	1.6	43
56	Attractor crisis and bursting in a fluid flow with two no-slip directions. Physical Review E, 2007, 75, 036309.	0.8	6
57	Influence of initial conditions on decaying two-dimensional turbulence. Physics of Fluids, 2007, 19, 046601.	1.6	13
58	Vortices in oscillating spin-up. Journal of Fluid Mechanics, 2007, 573, 339-369.	1.4	17
59	The effects of solid boundaries on confined two-dimensional turbulence. Journal of Fluid Mechanics, 2006, 554, 411.	1.4	54
60	Interaction of dipolar vortices with a step-like topography. Physics of Fluids, 2006, 18, 056603.	1.6	11
61	Î²-plane turbulence in a basin with no-slip boundaries. Physics of Fluids, 2006, 18, 026603.	1.6	9
62	Vortical motion in the head of an axisymmetric gravity current. Physics of Fluids, 2006, 18, 046601.	1.6	42
63	Inertia-induced coherent structures in a time-periodic viscous mixing flow. Physics of Fluids, 2006, 18, 083603.	1.6	17
64	Merger of coherent structures in time-periodic viscous flows. Chaos, 2006, 16, 043104.	1.0	16
65	The Behavior of Jet Currents over a Continental Slope Topography with a Possible Application to the Northern Current. Journal of Physical Oceanography, 2005, 35, 790-810.	0.7	16
66	Experiments and Simulations on Coastal Flows in the Presence of a Topographic Slope. Journal of Physical Oceanography, 2005, 35, 2204-2218.	0.7	7
67	Transition to Chaos in a Confined Two-Dimensional Fluid Flow. Physical Review Letters, 2005, 95, 104503.	2.9	35
68	Interaction of two unequal corotating vortices. Physics of Fluids, 2005, 17, 087103.	1.6	51
69	Vortex models based on similarity solutions of the two-dimensional diffusion equation. Physics of Fluids, 2004, 16, 3997-4011.	1.6	8
70	Stability and transport properties of multiple-patch quasiequilibria. Physics of Fluids, 2004, 16, 3656-3669.	1.6	1
71	Numerical simulation of barotropic jets over a sloping bottom: Comparison to a laboratory model of the Northern Current. Journal of Geophysical Research, 2004, 109, .	3.3	13
72	A numerical and experimental study on advection in three-dimensional Stokes flows. Journal of Fluid Mechanics, 2004, 514, 77-105.	1.4	41

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73	Self-organization of decaying quasi-two-dimensional turbulence in stratified fluid in rectangular containers. Journal of Fluid Mechanics, 2003, 495, 19-33.	1.4	22
74	On the wake structure behind a heated horizontal cylinder in cross-flow. Journal of Fluid Mechanics, 2003, 486, 189-211.	1.4	65
75	Quasi-two-dimensional turbulence in shallow fluid layers: The role of bottom friction and fluid layer depth. Physical Review E, 2003, 67, 066303.	0.8	47
76	Evolution and instability of monopolar vortices in a stratified fluid. Physics of Fluids, 2003, 15, 1033-1045.	1.6	18
77	A Note on the Effects of Solid Boundaries on Confined Decaying 2D Turbulence. , 2003, , 305-324.		1
78	Dissipation of kinetic energy in two-dimensional bounded flows. Physical Review E, 2002, 65, 066305.	0.8	23
79	Dipole formation by two interacting shielded monopoles in a stratified fluid. Physics of Fluids, 2002, 14, 704-720.	1.6	15
80	Mixing in the Stokes flow in a cylindrical container. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2002, 458, 1867-1885.	1.0	23
81	Self-organization of quasi-two-dimensional turbulence in stratified fluids in square and circular containers. Physics of Fluids, 2002, 14, 2150.	1.6	42
82	Ekman effects in a rotating flow over bottom topography. Journal of Fluid Mechanics, 2002, 471, 239-255.	1.4	44
83	Three-dimensional structure and decay properties of vortices in shallow fluid layers. Physics of Fluids, 2001, 13, 1932-1945.	1.6	45
84	Contour Dynamics with Non-uniform Background Vorticity. International Journal of Computational Fluid Dynamics, 2001, 15, 227-249.	0.5	3
85	Laboratory experiments on intrusive flows and internal waves in a pycnocline. Journal of Fluid Mechanics, 2001, 432, 285-311.	1.4	26
86	Dynamics of pancake-like vortices in a stratified fluid: experiments, model and numerical simulations. Journal of Fluid Mechanics, 2001, 433, 1-27.	1.4	37
87	The strain rate in evolutions of (elliptical) vortices in inviscid two-dimensional flows. Physics of Fluids, 2001, 13, 3699-3708.	1.6	8
88	Ekman decay of a dipolar vortex in a rotating fluid. Physics of Fluids, 2001, 13, 440-451.	1.6	26
89	Similarities of Patterns in Fluid and Granulated Flow Inside a Horizontally Rotating Cylinder. International Applied Mechanics, 2001, 37, 929-934.	0.2	6
90	Spin-up in a rectangular container with an internal cylindrical obstacle. Physics of Fluids, 2000, 12, 1986-1996.	1.6	1

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91	Interaction of Barotropic Vortices with Coastal Topography: Laboratory Experiments and Numerical Simulations. Journal of Physical Oceanography, 2000, 30, 2141-2162.	0.7	34
92	Nonlinear Ekman effects in rotating barotropic flows. Journal of Fluid Mechanics, 2000, 412, 75-91.	1.4	44
93	Linear spin-up in a sliced cylinder. Geophysical and Astrophysical Fluid Dynamics, 2000, 92, 85-114.	0.4	5
94	Energy Spectra for Decaying 2D Turbulence in a Bounded Domain. Physical Review Letters, 2000, 85, 306-309.	2.9	51
95	Decaying quasi-2D turbulence in a stratified fluid with circular boundaries. Europhysics Letters, 1999, 46, 339-345.	0.7	28
96	Decaying two-dimensional turbulence in square containers with no-slip or stress-free boundaries. Physics of Fluids, 1999, 11, 611-626.	1.6	59
97	Experiments on barotropic vortex-wall interaction on a topographic Î² plane. Journal of Geophysical Research, 1999, 104, 10917-10932.	3.3	5
98	Viscous evolution of 2D dipolar vortices. Fluid Dynamics Research, 1998, 22, 191-213.	0.6	29
99	The observation of a triangular vortex in a rotating fluid. Fluid Dynamics Research, 1998, 22, 265-279.	0.6	35
100	Decay of monopolar vortices in a stratified fluid. Fluid Dynamics Research, 1998, 23, 27-43.	0.6	16
101	Kinematic properties of monopolar vortices in a strain flow. Fluid Dynamics Research, 1998, 23, 319-341.	0.6	5
102	Generalized point-vortex model for the motion of a dipole-vortex on the Î²-plane. Fluid Dynamics Research, 1998, 23, 113-124.	0.6	2
103	Dipolar vortices in a strain flow. Physics of Fluids, 1998, 10, 144-159.	1.6	20
104	Evolution of an isolated turbulent region in a stratified fluid. Journal of Geophysical Research, 1998, 103, 24857-24868.	3.3	32
105	Spontaneous Spin-Up during the Decay of 2D Turbulence in a Square Container with Rigid Boundaries. Physical Review Letters, 1998, 80, 5129-5132.	2.9	63
106	On the interaction between two oppositely signed, shielded, monopolar vortices. Physics of Fluids, 1998, 10, 3099-3110.	1.6	9
107	Decaying quasi-two-dimensional viscous flow on a square domain. Physics of Fluids, 1998, 10, 595-606.	1.6	23
108	Dynamics of a vortex ring moving perpendicularly to the axis of a rotating fluid. Journal of Fluid Mechanics, 1998, 354, 69-100.	1.4	11

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109	Monopolar vortices in an irrotational annular shear flow. Journal of Fluid Mechanics, 1998, 360, 273-294.	1.4	14
110	Collapse interactions of finite-sized two-dimensional vortices. Physics of Fluids, 1997, 9, 3315-3322.	1.6	24
111	Free-surface effects on spin-up in a rectangular tank. Journal of Fluid Mechanics, 1997, 334, 189-210.	1.4	12
112	Dynamics of monopolar vortices in a strain flow. Journal of Fluid Mechanics, 1997, 345, 165-201.	1.4	19
113	Wave pattern formation in a fluid annulus with a radially vibrating inner cylinder. Journal of Fluid Mechanics, 1996, 328, 229-252.	1.4	13
114	Dynamics of a vortex ring in a rotating fluid. Journal of Fluid Mechanics, 1996, 317, 215-239.	1.4	25
115	Stable and unstable monopolar vortices in a stratified fluid. Journal of Fluid Mechanics, 1996, 311, 257.	1.4	54
116	Unsteady behaviour of a topography-modulated tripole. Journal of Fluid Mechanics, 1996, 307, 11-41.	1.4	32
117	Spinâ€up in a circular tank with a radial barrier. Physics of Fluids, 1996, 8, 2048-2059.	1.6	4
118	Spinâ€up in a rectangular tank with a discontinuous topography. Physics of Fluids, 1996, 8, 2943-2952.	1.6	3
119	Motion of a twoâ€dimensional monopolar vortex in a bounded rectangular domain. Physics of Fluids, 1996, 8, 2393-2399.	1.6	15
120	Numerical and experimental study of the interaction between a vortex dipole and a circular cylinder. Experiments in Fluids, 1995, 18, 153-163.	1.1	32
121	Collision of dipolar vortices on a Î² plane. Physics of Fluids, 1995, 7, 2735-2750.	1.6	22
122	Decay of dipolar vortex structures in a stratified fluid. Physics of Fluids, 1995, 7, 374-383.	1.6	33
123	Chaotic transport by dipolar vortices on a Î²-plane. Journal of Fluid Mechanics, 1995, 291, 139-161.	1.4	23
124	Two-dimensional flows with zero net momentum: evolution of vortex quadrupoles and oscillating-grid turbulence. Journal of Fluid Mechanics, 1995, 282, 21-44.	1.4	14
125	Nonlinear spinâ€up in a circular cylinder. Physics of Fluids, 1995, 7, 2989-2999.	1.6	9
126	Spinâ€up in a rectangular tank with low angular velocity. Physics of Fluids, 1994, 6, 1168-1176.	1.6	14

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127	Experiments on convection from a horizontal plate with and without background rotation. Experiments in Fluids, 1994, 16-16, 155-164.	1.1	18
128	Topography effects on vortices in a rotating fluid. Meccanica, 1994, 29, 431-451.	1.2	45
129	An experimental study of dipolar vortex structures in a stratified fluid. Journal of Fluid Mechanics, 1994, 279, 101-133.	1.4	106
130	The spin-up of fluid in a rectangular container with sloping bottom. Journal of Fluid Mechanics, 1994, 265, 125-159.	1.4	18
131	Experimental study of dipolar vortices on a topographic Î²T-plane. Journal of Fluid Mechanics, 1994, 259, 79-106.	1.4	58
132	The evolution of an isolated turbulent region in a twoâ€layer fluid. Physics of Fluids, 1994, 6, 287-296.	1.6	16
133	Experiments on the evolution of gravitational instability of an overturned, initially stably stratified fluid. Physics of Fluids A, Fluid Dynamics, 1993, 5, 2461-2466.	1.6	31
134	Formation of a Tripolar Vortex in a Stratified Fluid. Fluid Mechanics and Its Applications, 1993, , 405-409.	0.1	7
135	Spin-Up in Non-Axisymmetric Containers. , 1993, , 155-162.		0
136	The evolution of stable barotropic vortices in a rotating free-surface fluid. Journal of Fluid Mechanics, 1992, 239, 607.	1.4	45
137	Modelling the separation and eddy formation of coastal currents in a stratified tank. Experiments in Fluids, 1992, 13, 11-16.	1.1	7
138	Spin-up in a semicircular cylinder. International Journal for Numerical Methods in Fluids, 1992, 15, 503-524.	0.9	8
139	Laboratory experiments on the tripolar vortex in a rotating fluid. Journal of Fluid Mechanics, 1991, 225, 301-331.	1.4	127
140	An experimental study of unstable barotropic vortices in a rotating fluid. Journal of Fluid Mechanics, 1991, 223, 1.	1.4	224
141	Propagation of barotropic vortices over topography in a rotating tank. Journal of Fluid Mechanics, 1991, 233, 119-139.	1.4	132
142	Spinâ€up in a rectangular container. Physics of Fluids A, Fluid Dynamics, 1990, 2, 150-159.	1.6	56
143	Tripolar vortices in a rotating fluid. Nature, 1989, 338, 569-571.	13.7	132
144	Dipole formation and collisions in a stratified fluid. Nature, 1989, 340, 212-215.	13.7	121

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145	Spin-up phenomena in non-axisymmetric containers. Journal of Fluid Mechanics, 1989, 206, 171-191.	1.4	36
146	On the Oceanic Circulation Near a Shelf-Ice Edge. Glaciology and Quaternary Geology, 1987, , 37-56.	0.5	2
147	Fluid flow in a partially-filled rotating cylinder. Journal of Engineering Mathematics, 1986, 20, 233-250.	0.6	6
148	An analytical model for ice-edge upwelling. Geophysical and Astrophysical Fluid Dynamics, 1984, 29, 155-177.	0.4	2
149	Frontal upwelling in a rotating two-layer fluid. Geophysical and Astrophysical Fluid Dynamics, 1984, 29, 139-153.	0.4	4
150	Source-sink flow in a rotating cylinder. Journal of Engineering Mathematics, 1984, 18, 247-257.	0.6	6
151	Two-layer spin-up and frontogenesis. Journal of Fluid Mechanics, 1984, 143, 69-94.	1.4	34
152	The shear-layer structure in a rotating fluid near a differentially rotating sidewall. Journal of Fluid Mechanics, 1983, 130, 1.	1.4	18
153	The flow between two finite rotating disks enclosed by a cylinder. Journal of Fluid Mechanics, 1983, 128, 123.	1.4	140