

# G J F Van Heijst

## List of Publications by Year in descending order

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153  
papers

4,147  
citations

101543  
36  
h-index

149698  
56  
g-index

156  
all docs

156  
docs citations

156  
times ranked

1848  
citing authors

#	ARTICLE	IF	CITATIONS
1	An experimental study of unstable barotropic vortices in a rotating fluid. Journal of Fluid Mechanics, 1991, 223, 1.	3.4	224
2	The flow between two finite rotating disks enclosed by a cylinder. Journal of Fluid Mechanics, 1983, 128, 123.	3.4	140
3	Tripolar vortices in a rotating fluid. Nature, 1989, 338, 569-571.	27.8	132
4	Propagation of barotropic vortices over topography in a rotating tank. Journal of Fluid Mechanics, 1991, 233, 119-139.	3.4	132
5	Laboratory experiments on the tripolar vortex in a rotating fluid. Journal of Fluid Mechanics, 1991, 225, 301-331.	3.4	127
6	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.	12.4	125
7	Dipole formation and collisions in a stratified fluid. Nature, 1989, 340, 212-215.	27.8	121
8	An experimental study of dipolar vortex structures in a stratified fluid. Journal of Fluid Mechanics, 1994, 279, 101-133.	3.4	106
9	Kramers-Kronig relations for the dielectric function and the static conductivity of Coulomb systems. Europhysics Letters, 2010, 90, 10003.	2.0	75
10	The three-dimensional structure of an electromagnetically generated dipolar vortex in a shallow fluid layer. Physics of Fluids, 2008, 20, .	4.0	70
11	Two-Dimensional Navier–Stokes Turbulence in Bounded Domains. Applied Mechanics Reviews, 2009, 62, .	10.1	66
12	On the wake structure behind a heated horizontal cylinder in cross-flow. Journal of Fluid Mechanics, 2003, 486, 189-211.	3.4	65
13	Spontaneous Spin-Up during the Decay of 2D Turbulence in a Square Container with Rigid Boundaries. Physical Review Letters, 1998, 80, 5129-5132.	7.8	63
14	Decaying two-dimensional turbulence in square containers with no-slip or stress-free boundaries. Physics of Fluids, 1999, 11, 611-626.	4.0	59
15	Experimental study of dipolar vortices on a topographic $\hat{T}$ -plane. Journal of Fluid Mechanics, 1994, 259, 79-106.	3.4	58
16	Spin-up in a rectangular container. Physics of Fluids A, Fluid Dynamics, 1990, 2, 150-159.	1.6	56
17	Stable and unstable monopolar vortices in a stratified fluid. Journal of Fluid Mechanics, 1996, 311, 257.	3.4	54
18	The effects of solid boundaries on confined two-dimensional turbulence. Journal of Fluid Mechanics, 2006, 554, 411.	3.4	54

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19	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.	7.5	54
20	Energy Spectra for Decaying 2D Turbulence in a Bounded Domain. Physical Review Letters, 2000, 85, 306-309.	7.8	51
21	Interaction of two unequal corotating vortices. Physics of Fluids, 2005, 17, 087103.	4.0	51
22	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.	3.5	48
23	Quasi-two-dimensional turbulence in shallow fluid layers: The role of bottom friction and fluid layer depth. Physical Review E, 2003, 67, 066303.	2.1	47
24	Intrinsic three-dimensionality in electromagnetically driven shallow flows. Europhysics Letters, 2008, 83, 24001.	2.0	47
25	On the suitability of steady RANS CFD for forced mixing ventilation at transitional slot Reynolds numbers. Indoor Air, 2013, 23, 236-249.	4.3	47
26	Experiments on rapidly rotating turbulent flows. Physics of Fluids, 2009, 21, .	4.0	46
27	The evolution of stable barotropic vortices in a rotating free-surface fluid. Journal of Fluid Mechanics, 1992, 239, 607.	3.4	45
28	Topography effects on vortices in a rotating fluid. Meccanica, 1994, 29, 431-451.	2.0	45
29	Three-dimensional structure and decay properties of vortices in shallow fluid layers. Physics of Fluids, 2001, 13, 1932-1945.	4.0	45
30	Nonlinear Ekman effects in rotating barotropic flows. Journal of Fluid Mechanics, 2000, 412, 75-91.	3.4	44
31	Ekman effects in a rotating flow over bottom topography. Journal of Fluid Mechanics, 2002, 471, 239-255.	3.4	44
32	Vorticity dynamics of a dipole colliding with a no-slip wall. Physics of Fluids, 2007, 19, .	4.0	43
33	Self-organization of quasi-two-dimensional turbulence in stratified fluids in square and circular containers. Physics of Fluids, 2002, 14, 2150.	4.0	42
34	Vortical motion in the head of an axisymmetric gravity current. Physics of Fluids, 2006, 18, 046601.	4.0	42
35	A numerical and experimental study on advection in three-dimensional Stokes flows. Journal of Fluid Mechanics, 2004, 514, 77-105.	3.4	41
36	Dynamics of pancake-like vortices in a stratified fluid: experiments, model and numerical simulations. Journal of Fluid Mechanics, 2001, 433, 1-27.	3.4	37

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37	Spin-up phenomena in non-axisymmetric containers. Journal of Fluid Mechanics, 1989, 206, 171-191.	3.4	36
38	The observation of a triangular vortex in a rotating fluid. Fluid Dynamics Research, 1998, 22, 265-279.	1.3	35
39	Transition to Chaos in a Confined Two-Dimensional Fluid Flow. Physical Review Letters, 2005, 95, 104503.	7.8	35
40	Two-layer spin-up and frontogenesis. Journal of Fluid Mechanics, 1984, 143, 69-94.	3.4	34
41	Interaction of Barotropic Vortices with Coastal Topography: Laboratory Experiments and Numerical Simulations. Journal of Physical Oceanography, 2000, 30, 2141-2162.	1.7	34
42	Decay of dipolar vortex structures in a stratified fluid. Physics of Fluids, 1995, 7, 374-383.	4.0	33
43	Numerical and experimental study of the interaction between a vortex dipole and a circular cylinder. Experiments in Fluids, 1995, 18, 153-163.	2.4	32
44	Unsteady behaviour of a topography-modulated tripole. Journal of Fluid Mechanics, 1996, 307, 11-41.	3.4	32
45	Evolution of an isolated turbulent region in a stratified fluid. Journal of Geophysical Research, 1998, 103, 24857-24868.	3.3	32
46	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
47	Collapse of turbulence in stably stratified channel flow: a transient phenomenon. Quarterly Journal of the Royal Meteorological Society, 2015, 141, 2137-2147.	2.7	30
48	Viscous evolution of 2D dipolar vortices. Fluid Dynamics Research, 1998, 22, 191-213.	1.3	29
49	Decaying quasi-2D turbulence in a stratified fluid with circular boundaries. Europhysics Letters, 1999, 46, 339-345.	2.0	28
50	Boundary layer development in the flow field between a rotating and a stationary disk. Physics of Fluids, 2012, 24, .	4.0	28
51	PIV measurements of a plane wall jet in a confined space at transitional slot Reynolds numbers. Experiments in Fluids, 2012, 53, 499-517.	2.4	27
52	PIV measurements of isothermal plane turbulent impinging jets at moderate Reynolds numbers. Experiments in Fluids, 2017, 58, 1.	2.4	27
53	Laboratory experiments on intrusive flows and internal waves in a pycnocline. Journal of Fluid Mechanics, 2001, 432, 285-311.	3.4	26
54	Ekman decay of a dipolar vortex in a rotating fluid. Physics of Fluids, 2001, 13, 440-451.	4.0	26

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55	Dynamics of a vortex ring in a rotating fluid. Journal of Fluid Mechanics, 1996, 317, 215-239.	3.4	25
56	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.	1.6	25
57	Three-dimensional flow in electromagnetically driven shallow two-layer fluids. Physical Review E, 2010, 82, 026314.	2.1	25
58	The structure of sidewall boundary layers in confined rotating Rayleigh-Bénard convection. Journal of Fluid Mechanics, 2013, 727, 509-532.	3.4	25
59	Collapse interactions of finite-sized two-dimensional vortices. Physics of Fluids, 1997, 9, 3315-3322.	4.0	24
60	Chaotic transport by dipolar vortices on a $\hat{\Gamma}^2$ -plane. Journal of Fluid Mechanics, 1995, 291, 139-161.	3.4	23
61	Decaying quasi-two-dimensional viscous flow on a square domain. Physics of Fluids, 1998, 10, 595-606.	4.0	23
62	Dissipation of kinetic energy in two-dimensional bounded flows. Physical Review E, 2002, 65, 066305.	2.1	23
63	Mixing in the Stokes flow in a cylindrical container. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2002, 458, 1867-1885.	2.1	23
64	A model for vortical plumes in rotating convection. Physics of Fluids, 2008, 20, .	4.0	23
65	Collision of dipolar vortices on a $\hat{\Gamma}^2$ plane. Physics of Fluids, 1995, 7, 2735-2750.	4.0	22
66	Self-organization of decaying quasi-two-dimensional turbulence in stratified fluid in rectangular containers. Journal of Fluid Mechanics, 2003, 495, 19-33.	3.4	22
67	Laboratory experiments on multipolar vortices in a rotating fluid. Physics of Fluids, 2010, 22, .	4.0	21
68	Dipolar vortices in a strain flow. Physics of Fluids, 1998, 10, 144-159.	4.0	20
69	Extreme Small-Scale Clustering of Droplets in Turbulence Driven by Hydrodynamic Interactions. Physical Review Letters, 2018, 120, 244504.	7.8	20
70	Dynamics of monopolar vortices in a strain flow. Journal of Fluid Mechanics, 1997, 345, 165-201.	3.4	19
71	The shear-layer structure in a rotating fluid near a differentially rotating sidewall. Journal of Fluid Mechanics, 1983, 130, 1.	3.4	18
72	Experiments on convection from a horizontal plate with and without background rotation. Experiments in Fluids, 1994, 16-16, 155-164.	2.4	18

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73	The spin-up of fluid in a rectangular container with sloping bottom. Journal of Fluid Mechanics, 1994, 265, 125-159.	3.4	18
74	Evolution and instability of monopolar vortices in a stratified fluid. Physics of Fluids, 2003, 15, 1033-1045.	4.0	18
75	Dynamics and structure of decaying shallow dipolar vortices. Physics of Fluids, 2010, 22, .	4.0	18
76	Dissipation of coherent structures in confined two-dimensional turbulence. Physics of Fluids, 2017, 29, 111103.	4.0	18
77	Inertia-induced coherent structures in a time-periodic viscous mixing flow. Physics of Fluids, 2006, 18, 083603.	4.0	17
78	Vortices in oscillating spin-up. Journal of Fluid Mechanics, 2007, 573, 339-369.	3.4	17
79	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.	3.4	17
80	The evolution of an isolated turbulent region in a two-layer fluid. Physics of Fluids, 1994, 6, 287-296.	4.0	16
81	Decay of monopolar vortices in a stratified fluid. Fluid Dynamics Research, 1998, 23, 27-43.	1.3	16
82	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.	1.7	16
83	Merger of coherent structures in time-periodic viscous flows. Chaos, 2006, 16, 043104.	2.5	16
84	Motion of a two-dimensional monopolar vortex in a bounded rectangular domain. Physics of Fluids, 1996, 8, 2393-2399.	4.0	15
85	Dipole formation by two interacting shielded monopoles in a stratified fluid. Physics of Fluids, 2002, 14, 704-720.	4.0	15
86	Horizontal and vertical motions of barotropic vortices over a submarine mountain. Journal of Fluid Mechanics, 2012, 695, 173-198.	3.4	15
87	Spin-up in a rectangular tank with low angular velocity. Physics of Fluids, 1994, 6, 1168-1176.	4.0	14
88	Two-dimensional flows with zero net momentum: evolution of vortex quadrupoles and oscillating-grid turbulence. Journal of Fluid Mechanics, 1995, 282, 21-44.	3.4	14
89	Monopolar vortices in an irrotational annular shear flow. Journal of Fluid Mechanics, 1998, 360, 273-294.	3.4	14
90	Virial theorem for an inhomogeneous medium, boundary conditions for the wave functions, and stress tensor in quantum statistics. Physical Review E, 2010, 82, 010102.	2.1	14

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91	Wave pattern formation in a fluid annulus with a radially vibrating inner cylinder. Journal of Fluid Mechanics, 1996, 328, 229-252.	3.4	13
92	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
93	Influence of initial conditions on decaying two-dimensional turbulence. Physics of Fluids, 2007, 19, 046601.	4.0	13
94	Meandering streams in a shallow fluid layer. Europhysics Letters, 2009, 85, 54001.	2.0	13
95	Free-surface effects on spin-up in a rectangular tank. Journal of Fluid Mechanics, 1997, 334, 189-210.	3.4	12
96	Spontaneous angular momentum generation of two-dimensional fluid flow in an elliptic geometry. Physical Review E, 2008, 78, 036301.	2.1	12
97	Scaling of decaying shallow axisymmetric swirl flows. Journal of Fluid Mechanics, 2010, 648, 471-484.	3.4	12
98	Dynamics of a vortex ring moving perpendicularly to the axis of a rotating fluid. Journal of Fluid Mechanics, 1998, 354, 69-100.	3.4	11
99	Interaction of dipolar vortices with a step-like topography. Physics of Fluids, 2006, 18, 056603.	4.0	11
100	Dynamics of two identical vortices in linear shear. Physics of Fluids, 2010, 22, 117104.	4.0	11
101	Scaling and asymmetry in an electromagnetically forced dipolar flow structure. Physical Review E, 2011, 83, 016306.	2.1	11
102	Nonlinear spin-up in a circular cylinder. Physics of Fluids, 1995, 7, 2989-2999.	4.0	9
103	On the interaction between two oppositely signed, shielded, monopolar vortices. Physics of Fluids, 1998, 10, 3099-3110.	4.0	9
104	$\hat{r}^2$ -plane turbulence in a basin with no-slip boundaries. Physics of Fluids, 2006, 18, 026603.	4.0	9
105	Regimes of two-dimensionality of decaying shallow axisymmetric swirl flows with background rotation. Journal of Fluid Mechanics, 2012, 691, 214-244.	3.4	9
106	The maximum sustainable heat flux in stably stratified channel flows. Quarterly Journal of the Royal Meteorological Society, 2016, 142, 781-792.	2.7	9
107	Spin-up in a semicircular cylinder. International Journal for Numerical Methods in Fluids, 1992, 15, 503-524.	1.6	8
108	The strain rate in evolutions of (elliptical) vortices in inviscid two-dimensional flows. Physics of Fluids, 2001, 13, 3699-3708.	4.0	8

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109	Vortex models based on similarity solutions of the two-dimensional diffusion equation. <i>Physics of Fluids</i> , 2004, 16, 3997-4011.	4.0	8
110	On the Reynolds number scaling of vorticity production at no-slip walls during vortex-wall collisions. <i>Theoretical and Computational Fluid Dynamics</i> , 2011, 25, 293-300.	2.2	8
111	Lyapunov-stability of solution branches of rotating disk flow. <i>Physics of Fluids</i> , 2013, 25, 073602.	4.0	8
112	Modelling the separation and eddy formation of coastal currents in a stratified tank. <i>Experiments in Fluids</i> , 1992, 13, 11-16.	2.4	7
113	Experiments and Simulations on Coastal Flows in the Presence of a Topographic Slope. <i>Journal of Physical Oceanography</i> , 2005, 35, 2204-2218.	1.7	7
114	Interaction of monopoles, dipoles, and turbulence with a shear flow. <i>Physics of Fluids</i> , 2016, 28, 093603.	4.0	7
115	Formation of a Tripolar Vortex in a Stratified Fluid. <i>Fluid Mechanics and Its Applications</i> , 1993, , 405-409.	0.2	7
116	Source-sink flow in a rotating cylinder. <i>Journal of Engineering Mathematics</i> , 1984, 18, 247-257.	1.2	6
117	Fluid flow in a partially-filled rotating cylinder. <i>Journal of Engineering Mathematics</i> , 1986, 20, 233-250.	1.2	6
118	Similarities of Patterns in Fluid and Granulated Flow Inside a Horizontally Rotating Cylinder. <i>International Applied Mechanics</i> , 2001, 37, 929-934.	0.6	6
119	Attractor crisis and bursting in a fluid flow with two no-slip directions. <i>Physical Review E</i> , 2007, 75, 036309.	2.1	6
120	Vortex dipole collision with a sliding wall. <i>Fluid Dynamics Research</i> , 2013, 45, 045501.	1.3	6
121	Kinematic properties of monopolar vortices in a strain flow. <i>Fluid Dynamics Research</i> , 1998, 23, 319-341.	1.3	5
122	Experiments on barotropic vortex-wall interaction on a topographic $\hat{f}^2$ plane. <i>Journal of Geophysical Research</i> , 1999, 104, 10917-10932.	3.3	5
123	Linear spin-up in a sliced cylinder. <i>Geophysical and Astrophysical Fluid Dynamics</i> , 2000, 92, 85-114.	1.2	5
124	Structure-function scaling of bounded two-dimensional turbulence. <i>Physical Review E</i> , 2011, 84, 026310.	2.1	5
125	The theory of a metal-insulator transition at zero temperature and features of the dielectric function in the Coulomb model of matter. <i>High Temperature</i> , 2013, 51, 457-464.	1.0	5
126	Shallow flows: 2D or not 2D?. <i>Environmental Fluid Mechanics</i> , 2014, 14, 945-956.	1.6	5



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127	PHOSPHORESCENT FLOW TRACKING FOR QUANTITATIVE MEASUREMENTS OF LIQUID SPRAY DISPERSION. Atomization and Sprays, 2016, 26, 219-233.	0.8	5
128	Frontal upwelling in a rotating two-layer fluid. Geophysical and Astrophysical Fluid Dynamics, 1984, 29, 139-153.	1.2	4
129	Spin-up in a circular tank with a radial barrier. Physics of Fluids, 1996, 8, 2048-2059.	4.0	4
130	On the large-scale structure and spectral dynamics of two-dimensional turbulence in a periodic channel. Physics of Fluids, 2008, 20, 056602.	4.0	4
131	Spin-up in a rectangular tank with a discontinuous topography. Physics of Fluids, 1996, 8, 2943-2952.	4.0	3
132	Contour Dynamics with Non-uniform Background Vorticity. International Journal of Computational Fluid Dynamics, 2001, 15, 227-249.	1.2	3
133	Inertial oscillations in a confined monopolar vortex subjected to background rotation. Physics of Fluids, 2009, 21, 116602.	4.0	3
134	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, .	4.0	3
135	Lanthanide-based laser-induced phosphorescence for spray diagnostics. Review of Scientific Instruments, 2016, 87, 033702.	1.3	3
136	High-resolution single-camera photogrammetry: incorporation of refraction at a fluid interface. Experiments in Fluids, 2020, 61, 1.	2.4	3
137	An analytical model for ice-edge upwelling. Geophysical and Astrophysical Fluid Dynamics, 1984, 29, 155-177.	1.2	2
138	Generalized point-vortex model for the motion of a dipole-vortex on the $\hat{\mathbf{i}}^2$ -plane. Fluid Dynamics Research, 1998, 23, 113-124.	1.3	2
139	Experiments and simulations on self-organization of confined quasi-two-dimensional turbulent flows with discontinuous topography. Physics of Fluids, 2010, 22, 025101.	4.0	2
140	Experimental stabilisation of 2D vortex patterns using time-dependent forcing. Europhysics Letters, 2013, 104, 24003.	2.0	2
141	Preferential states of rotating turbulent flows in a square container with a step topography. Physics of Fluids, 2013, 25, .	4.0	2
142	On the Oceanic Circulation Near a Shelf-Ice Edge. Glaciology and Quaternary Geology, 1987, , 37-56.	0.5	2
143	Effect of microbubble-induced cavitation on the dispersion of sprays. Physical Review Fluids, 2017, 2, .	2.5	2
144	Spin-up in a rectangular container with an internal cylindrical obstacle. Physics of Fluids, 2000, 12, 1986-1996.	4.0	1

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145	Stability and transport properties of multiple-patch quasiequilibria. Physics of Fluids, 2004, 16, 3656-3669.	4.0	1
146	A Note on the Effects of Solid Boundaries on Confined Decaying 2D Turbulence. , 2003, , 305-324.		1
147	The Okubo-Weiss criterion in hydrodynamic flows: geometric aspects and further extension. Fluid Dynamics Research, 2022, 54, 015505.	1.3	1
148	Dispersion and Mixing in Quasi-two-dimensional Rotating Flows. , 2008, , 119-136.		0
149	Decreasing luminescence lifetime of evaporating phosphorescent droplets. Applied Physics Letters, 2016, 109, 234103.	3.3	0
150	Wavelength selection of vortex ripples in an oscillating cylinder: The effect of curvature and background rotation. Physical Review E, 2019, 99, 033105.	2.1	0
151	The 3D character of decaying turbulence in a shallow fluid layer. Springer Proceedings in Physics, 2009, , 293-296.	0.2	0
152	The minimum-entropy principle for decaying 2D turbulence in circular domains. Springer Proceedings in Physics, 2009, , 257-260.	0.2	0
153	Spin-Up in Non-Axisymmetric Containers. , 1993, , 155-162.		0