

G J F Van Heijst

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155
papers

3,563
citations

33
h-index

51
g-index

156
ext. papers

3,799
ext. citations

4.1
avg, IF

5.21
L-index

#	Paper	IF	Citations
155	An experimental study of unstable barotropic vortices in a rotating fluid. <i>Journal of Fluid Mechanics</i> , 1991 , 223, 1	3.7	191
154	The flow between two finite rotating disks enclosed by a cylinder. <i>Journal of Fluid Mechanics</i> , 1983 , 128, 123	3.7	127
153	Tripolar vortices in a rotating fluid. <i>Nature</i> , 1989 , 338, 569-571	50.4	114
152	Dipole formation and collisions in a stratified fluid. <i>Nature</i> , 1989 , 340, 212-215	50.4	113
151	Propagation of barotropic vortices over topography in a rotating tank. <i>Journal of Fluid Mechanics</i> , 1991 , 233, 119-139	3.7	112
150	Laboratory experiments on the tripolar vortex in a rotating fluid. <i>Journal of Fluid Mechanics</i> , 1991 , 225, 301-331	3.7	108
149	CFD simulation of pollutant dispersion around isolated buildings: on the role of convective and turbulent mass fluxes in the prediction accuracy. <i>Journal of Hazardous Materials</i> , 2011 , 194, 422-34	12.8	102
148	An experimental study of dipolar vortex structures in a stratified fluid. <i>Journal of Fluid Mechanics</i> , 1994 , 279, 101-133	3.7	94
147	The three-dimensional structure of an electromagnetically generated dipolar vortex in a shallow fluid layer. <i>Physics of Fluids</i> , 2008 , 20, 116601	4.4	63
146	Two-Dimensional Navier-Stokes Turbulence in Bounded Domains. <i>Applied Mechanics Reviews</i> , 2009 , 62,	8.6	59
145	Spontaneous Spin-Up during the Decay of 2D Turbulence in a Square Container with Rigid Boundaries. <i>Physical Review Letters</i> , 1998 , 80, 5129-5132	7.4	59
144	Experimental study of dipolar vortices on a topographic β -plane. <i>Journal of Fluid Mechanics</i> , 1994 , 259, 79-106	3.7	55
143	Decaying two-dimensional turbulence in square containers with no-slip or stress-free boundaries. <i>Physics of Fluids</i> , 1999 , 11, 611-626	4.4	54
142	On the wake structure behind a heated horizontal cylinder in cross-flow. <i>Journal of Fluid Mechanics</i> , 2003 , 486, 189-211	3.7	53
141	Stable and unstable monopolar vortices in a stratified fluid. <i>Journal of Fluid Mechanics</i> , 1996 , 311, 257	3.7	53
140	The effects of solid boundaries on confined two-dimensional turbulence. <i>Journal of Fluid Mechanics</i> , 2006 , 554, 411	3.7	51
139	Spin-up in a rectangular container. <i>Physics of Fluids A, Fluid Dynamics</i> , 1990 , 2, 150-159		49

138	Large-Eddy Simulation of pollutant dispersion around a cubical building: analysis of the turbulent mass transport mechanism by unsteady concentration and velocity statistics. <i>Environmental Pollution</i> , 2012 , 167, 47-57	9.3	47
137	Energy spectra for decaying 2D turbulence in a bounded domain. <i>Physical Review Letters</i> , 2000 , 85, 306-9	7.4	46
136	Intrinsic three-dimensionality in electromagnetically driven shallow flows. <i>Europhysics Letters</i> , 2008 , 83, 24001	1.6	43
135	Interaction of two unequal corotating vortices. <i>Physics of Fluids</i> , 2005 , 17, 087103	4.4	42
134	Three-dimensional structure and decay properties of vortices in shallow fluid layers. <i>Physics of Fluids</i> , 2001 , 13, 1932-1945	4.4	42
133	Quasi-two-dimensional turbulence in shallow fluid layers: the role of bottom friction and fluid layer depth. <i>Physical Review E</i> , 2003 , 67, 066303	2.4	41
132	The evolution of stable barotropic vortices in a rotating free-surface fluid. <i>Journal of Fluid Mechanics</i> , 1992 , 239, 607	3.7	41
131	Experiments on rapidly rotating turbulent flows. <i>Physics of Fluids</i> , 2009 , 21, 096601	4.4	40
130	A numerical and experimental study on advection in three-dimensional Stokes flows. <i>Journal of Fluid Mechanics</i> , 2004 , 514, 77-105	3.7	39
129	Nonlinear Ekman effects in rotating barotropic flows. <i>Journal of Fluid Mechanics</i> , 2000 , 412, 75-91	3.7	39
128	Self-organization of quasi-two-dimensional turbulence in stratified fluids in square and circular containers. <i>Physics of Fluids</i> , 2002 , 14, 2150	4.4	38
127	Topography effects on vortices in a rotating fluid. <i>Meccanica</i> , 1994 , 29, 431-451	2.1	38
126	Vortical motion in the head of an axisymmetric gravity current. <i>Physics of Fluids</i> , 2006 , 18, 046601	4.4	36
125	On the suitability of steady RANS CFD for forced mixing ventilation at transitional slot Reynolds numbers. <i>Indoor Air</i> , 2013 , 23, 236-49	5.4	35
124	Vorticity dynamics of a dipole colliding with a no-slip wall. <i>Physics of Fluids</i> , 2007 , 19, 126603	4.4	35
123	Ekman effects in a rotating flow over bottom topography. <i>Journal of Fluid Mechanics</i> , 2002 , 471, 239-255	3.7	34
122	Two-layer spin-up and frontogenesis. <i>Journal of Fluid Mechanics</i> , 1984 , 143, 69-94	3.7	33
121	The effect of an urban park on the microclimate in its vicinity: a case study for Antwerp, Belgium. <i>International Journal of Climatology</i> , 2018 , 38, e303-e322	3.5	32

120	Dynamics of pancake-like vortices in a stratified fluid: experiments, model and numerical simulations. <i>Journal of Fluid Mechanics</i> , 2001 , 433, 1-27	3.7	32
119	Spin-up phenomena in non-axisymmetric containers. <i>Journal of Fluid Mechanics</i> , 1989 , 206, 171-191	3.7	32
118	Transition to chaos in a confined two-dimensional fluid flow. <i>Physical Review Letters</i> , 2005 , 95, 104503	7.4	31
117	Decay of dipolar vortex structures in a stratified fluid. <i>Physics of Fluids</i> , 1995 , 7, 374-383	4.4	31
116	The observation of a triangular vortex in a rotating fluid. <i>Fluid Dynamics Research</i> , 1998 , 22, 265-279	1.2	30
115	Interaction of Barotropic Vortices with Coastal Topography: Laboratory Experiments and Numerical Simulations. <i>Journal of Physical Oceanography</i> , 2000 , 30, 2141-2162	2.4	30
114	Numerical and experimental study of the interaction between a vortex dipole and a circular cylinder. <i>Experiments in Fluids</i> , 1995 , 18, 153-163	2.5	29
113	Kramers-Kronig relations for the dielectric function and the static conductivity of Coulomb systems. <i>Europhysics Letters</i> , 2010 , 90, 10003	1.6	28
112	Decaying quasi-2D turbulence in a stratified fluid with circular boundaries. <i>Europhysics Letters</i> , 1999 , 46, 339-345	1.6	28
111	Unsteady behaviour of a topography-modulated tripole. <i>Journal of Fluid Mechanics</i> , 1996 , 307, 11-41	3.7	28
110	Boundary layer development in the flow field between a rotating and a stationary disk. <i>Physics of Fluids</i> , 2012 , 24, 033601	4.4	27
109	Viscous evolution of 2D dipolar vortices. <i>Fluid Dynamics Research</i> , 1998 , 22, 191-213	1.2	27
108	Experiments on the evolution of gravitational instability of an overturned, initially stably stratified fluid. <i>Physics of Fluids A, Fluid Dynamics</i> , 1993 , 5, 2461-2466		26
107	Influence of dilated cardiomyopathy and a left ventricular assist device on vortex dynamics in the left ventricle. <i>Computer Methods in Biomechanics and Biomedical Engineering</i> , 2008 , 11, 649-60	2.1	24
106	Three-dimensional flow in electromagnetically driven shallow two-layer fluids. <i>Physical Review E</i> , 2010 , 82, 026314	2.4	23
105	Laboratory experiments on intrusive flows and internal waves in a pycnocline. <i>Journal of Fluid Mechanics</i> , 2001 , 432, 285-311	3.7	23
104	Evolution of an isolated turbulent region in a stratified fluid. <i>Journal of Geophysical Research</i> , 1998 , 103, 24857-24868		23
103	Chaotic transport by dipolar vortices on a \mathbb{E} plane. <i>Journal of Fluid Mechanics</i> , 1995 , 291, 139-161	3.7	23

102	Collapse of turbulence in stably stratified channel flow: a transient phenomenon. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2015 , 141, 2137-2147	6.4	22
101	Collapse interactions of finite-sized two-dimensional vortices. <i>Physics of Fluids</i> , 1997 , 9, 3315-3322	4.4	22
100	Ekman decay of a dipolar vortex in a rotating fluid. <i>Physics of Fluids</i> , 2001 , 13, 440-451	4.4	22
99	The structure of sidewall boundary layers in confined rotating Rayleigh-Bard convection. <i>Journal of Fluid Mechanics</i> , 2013 , 727, 509-532	3.7	21
98	Decaying quasi-two-dimensional viscous flow on a square domain. <i>Physics of Fluids</i> , 1998 , 10, 595-606	4.4	21
97	Collision of dipolar vortices on a plane. <i>Physics of Fluids</i> , 1995 , 7, 2735-2750	4.4	21
96	PIV measurements of a plane wall jet in a confined space at transitional slot Reynolds numbers. <i>Experiments in Fluids</i> , 2012 , 53, 499-517	2.5	20
95	Mixing in the Stokes flow in a cylindrical container. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2002 , 458, 1867-1885	2.4	20
94	Dissipation of kinetic energy in two-dimensional bounded flows. <i>Physical Review E</i> , 2002 , 65, 066305	2.4	19
93	Self-organization of decaying quasi-two-dimensional turbulence in stratified fluid in rectangular containers. <i>Journal of Fluid Mechanics</i> , 2003 , 495, 19-33	3.7	18
92	Dynamics and structure of decaying shallow dipolar vortices. <i>Physics of Fluids</i> , 2010 , 22, 116606	4.4	17
91	Dynamics of monopolar vortices in a strain flow. <i>Journal of Fluid Mechanics</i> , 1997 , 345, 165-201	3.7	17
90	A model for vortical plumes in rotating convection. <i>Physics of Fluids</i> , 2008 , 20, 066602	4.4	17
89	Vortices in oscillating spin-up. <i>Journal of Fluid Mechanics</i> , 2007 , 573, 339-369	3.7	17
88	Inertia-induced coherent structures in a time-periodic viscous mixing flow. <i>Physics of Fluids</i> , 2006 , 18, 083603	4.4	17
87	Experiments on convection from a horizontal plate with and without background rotation. <i>Experiments in Fluids</i> , 1994 , 16-16, 155-164	2.5	17
86	The shear-layer structure in a rotating fluid near a differentially rotating sidewall. <i>Journal of Fluid Mechanics</i> , 1983 , 130, 1	3.7	17
85	Laboratory experiments on multipolar vortices in a rotating fluid. <i>Physics of Fluids</i> , 2010 , 22, 094104	4.4	16

84	Dipolar vortices in a strain flow. <i>Physics of Fluids</i> , 1998 , 10, 144-159	4.4	16
83	Merger of coherent structures in time-periodic viscous flows. <i>Chaos</i> , 2006 , 16, 043104	3.3	16
82	Evolution and instability of monopolar vortices in a stratified fluid. <i>Physics of Fluids</i> , 2003 , 15, 1033-1045	4.4	16
81	Dynamics of a vortex ring in a rotating fluid. <i>Journal of Fluid Mechanics</i> , 1996 , 317, 215-239	3.7	16
80	The spin-up of fluid in a rectangular container with sloping bottom. <i>Journal of Fluid Mechanics</i> , 1994 , 265, 125-159	3.7	16
79	Decay of monopolar vortices in a stratified fluid. <i>Fluid Dynamics Research</i> , 1998 , 23, 27-43	1.2	15
78	Dipole formation by two interacting shielded monopoles in a stratified fluid. <i>Physics of Fluids</i> , 2002 , 14, 704-720	4.4	15
77	The evolution of an isolated turbulent region in a two-layer fluid. <i>Physics of Fluids</i> , 1994 , 6, 287-296	4.4	15
76	The Behavior of Jet Currents over a Continental Slope Topography with a Possible Application to the Northern Current. <i>Journal of Physical Oceanography</i> , 2005 , 35, 790-810	2.4	14
75	Monopolar vortices in an irrotational annular shear flow. <i>Journal of Fluid Mechanics</i> , 1998 , 360, 273-294	3.7	14
74	Motion of a two-dimensional monopolar vortex in a bounded rectangular domain. <i>Physics of Fluids</i> , 1996 , 8, 2393-2399	4.4	14
73	Dissipation of coherent structures in confined two-dimensional turbulence. <i>Physics of Fluids</i> , 2017 , 29, 111103	4.4	13
72	Numerical simulation of barotropic jets over a sloping bottom: Comparison to a laboratory model of the Northern Current. <i>Journal of Geophysical Research</i> , 2004 , 109,		13
71	Spin-up in a rectangular tank with low angular velocity. <i>Physics of Fluids</i> , 1994 , 6, 1168-1176	4.4	13
70	PIV measurements of isothermal plane turbulent impinging jets at moderate Reynolds numbers. <i>Experiments in Fluids</i> , 2017 , 58, 1	2.5	12
69	An experimental study of the effect of external turbulence on the decay of a single vortex and a vortex pair. <i>Journal of Fluid Mechanics</i> , 2011 , 670, 214-239	3.7	12
68	Meandering streams in a shallow fluid layer. <i>Europhysics Letters</i> , 2009 , 85, 54001	1.6	12
67	Two-dimensional flows with zero net momentum: evolution of vortex quadrupoles and oscillating-grid turbulence. <i>Journal of Fluid Mechanics</i> , 1995 , 282, 21-44	3.7	12

66	Horizontal and vertical motions of barotropic vortices over a submarine mountain. <i>Journal of Fluid Mechanics</i> , 2012 , 695, 173-198	3.7	11
65	Virial theorem for an inhomogeneous medium, boundary conditions for the wave functions, and stress tensor in quantum statistics. <i>Physical Review E</i> , 2010 , 82, 010102	2.4	11
64	Scaling and asymmetry in an electromagnetically forced dipolar flow structure. <i>Physical Review E</i> , 2011 , 83, 016306	2.4	11
63	Scaling of decaying shallow axisymmetric swirl flows. <i>Journal of Fluid Mechanics</i> , 2010 , 648, 471-484	3.7	11
62	Spontaneous angular momentum generation of two-dimensional fluid flow in an elliptic geometry. <i>Physical Review E</i> , 2008 , 78, 036301	2.4	11
61	Free-surface effects on spin-up in a rectangular tank. <i>Journal of Fluid Mechanics</i> , 1997 , 334, 189-210	3.7	10
60	Influence of initial conditions on decaying two-dimensional turbulence. <i>Physics of Fluids</i> , 2007 , 19, 046604	4.4	10
59	Interaction of dipolar vortices with a step-like topography. <i>Physics of Fluids</i> , 2006 , 18, 056603	4.4	10
58	Dynamics of two identical vortices in linear shear. <i>Physics of Fluids</i> , 2010 , 22, 117104	4.4	9
57	Eplane turbulence in a basin with no-slip boundaries. <i>Physics of Fluids</i> , 2006 , 18, 026603	4.4	9
56	Wave pattern formation in a fluid annulus with a radially vibrating inner cylinder. <i>Journal of Fluid Mechanics</i> , 1996 , 328, 229-252	3.7	9
55	Extreme Small-Scale Clustering of Droplets in Turbulence Driven by Hydrodynamic Interactions. <i>Physical Review Letters</i> , 2018 , 120, 244504	7.4	8
54	Regimes of two-dimensionality of decaying shallow axisymmetric swirl flows with background rotation. <i>Journal of Fluid Mechanics</i> , 2012 , 691, 214-244	3.7	8
53	The strain rate in evolutions of (elliptical) vortices in inviscid two-dimensional flows. <i>Physics of Fluids</i> , 2001 , 13, 3699-3708	4.4	8
52	On the interaction between two oppositely signed, shielded, monopolar vortices. <i>Physics of Fluids</i> , 1998 , 10, 3099-3110	4.4	8
51	Nonlinear spin-up in a circular cylinder. <i>Physics of Fluids</i> , 1995 , 7, 2989-2999	4.4	8
50	Spin-up in a semicircular cylinder. <i>International Journal for Numerical Methods in Fluids</i> , 1992 , 15, 503-524	4.9	8
49	Lyapunov-stability of solution branches of rotating disk flow. <i>Physics of Fluids</i> , 2013 , 25, 073602	4.4	7

48	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	2.3	7
47	Vortex models based on similarity solutions of the two-dimensional diffusion equation. <i>Physics of Fluids</i> , 2004 , 16, 3997-4011	4.4	7
46	The maximum sustainable heat flux in stably stratified channel flows. <i>Quarterly Journal of the Royal Meteorological Society</i> , 2016 , 142, 781-792	6.4	6
45	Attractor crisis and bursting in a fluid flow with two no-slip directions. <i>Physical Review E</i> , 2007 , 75, 036302	2.4	6
44	Similarities of Patterns in Fluid and Granulated Flow Inside a Horizontally Rotating Cylinder. <i>International Applied Mechanics</i> , 2001 , 37, 929-934	1	6
43	Dynamics of a vortex ring moving perpendicularly to the axis of a rotating fluid. <i>Journal of Fluid Mechanics</i> , 1998 , 354, 69-100	3.7	6
42	Modelling the separation and eddy formation of coastal currents in a stratified tank. <i>Experiments in Fluids</i> , 1992 , 13, 11-16	2.5	6
41	Fluid flow in a partially-filled rotating cylinder. <i>Journal of Engineering Mathematics</i> , 1986 , 20, 233-250	1.2	6
40	PHOSPHORESCENT FLOW TRACKING FOR QUANTITATIVE MEASUREMENTS OF LIQUID SPRAY DISPERSION. <i>Atomization and Sprays</i> , 2016 , 26, 219-233	1.2	5
39	Interaction of monopoles, dipoles, and turbulence with a shear flow. <i>Physics of Fluids</i> , 2016 , 28, 093603	4.4	5
38	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	0.8	5
37	Vortex dipole collision with a sliding wall. <i>Fluid Dynamics Research</i> , 2013 , 45, 045501	1.2	5
36	Kinematic properties of monopolar vortices in a strain flow. <i>Fluid Dynamics Research</i> , 1998 , 23, 319-341	1.2	5
35	Experiments and Simulations on Coastal Flows in the Presence of a Topographic Slope. <i>Journal of Physical Oceanography</i> , 2005 , 35, 2204-2218	2.4	5
34	Linear spin-up in a sliced cylinder. <i>Geophysical and Astrophysical Fluid Dynamics</i> , 2000 , 92, 85-114	1.4	5
33	Experiments on barotropic vortex-wall interaction on a topographic Ω -plane. <i>Journal of Geophysical Research</i> , 1999 , 104, 10917-10932		5
32	On the large-scale structure and spectral dynamics of two-dimensional turbulence in a periodic channel. <i>Physics of Fluids</i> , 2008 , 20, 056602	4.4	4
31	Spin-up in a circular tank with a radial barrier. <i>Physics of Fluids</i> , 1996 , 8, 2048-2059	4.4	4

30	Frontal upwelling in a rotating two-layer fluid. <i>Geophysical and Astrophysical Fluid Dynamics</i> , 1984 , 29, 139-153	1.4	4
29	Source-sink flow in a rotating cylinder. <i>Journal of Engineering Mathematics</i> , 1984 , 18, 247-257	1.2	4
28	Shallow flows: 2D or not 2D?. <i>Environmental Fluid Mechanics</i> , 2014 , 14, 945-956	2.2	3
27	Structure-function scaling of bounded two-dimensional turbulence. <i>Physical Review E</i> , 2011 , 84, 026310	2.4	3
26	Inertial oscillations in a confined monopolar vortex subjected to background rotation. <i>Physics of Fluids</i> , 2009 , 21, 116602	4.4	3
25	The break-up of Ekman theory in a flow subjected to background rotation and driven by a non-conservative body force. <i>Physics of Fluids</i> , 2012 , 24, 116602	4.4	3
24	Contour Dynamics with Non-uniform Background Vorticity. <i>International Journal of Computational Fluid Dynamics</i> , 2001 , 15, 227-249	1.2	3
23	Spin-up in a rectangular tank with a discontinuous topography. <i>Physics of Fluids</i> , 1996 , 8, 2943-2952	4.4	3
22	Formation of a Tripolar Vortex in a Stratified Fluid. <i>Fluid Mechanics and Its Applications</i> , 1993 , 405-409	0.2	3
21	Lanthanide-based laser-induced phosphorescence for spray diagnostics. <i>Review of Scientific Instruments</i> , 2016 , 87, 033702	1.7	3
20	Experimental stabilisation of 2D vortex patterns using time-dependent forcing. <i>Europhysics Letters</i> , 2013 , 104, 24003	1.6	2
19	Preferential states of rotating turbulent flows in a square container with a step topography. <i>Physics of Fluids</i> , 2013 , 25, 015109	4.4	2
18	Generalized point-vortex model for the motion of a dipole-vortex on the \mathbb{R}^2 plane. <i>Fluid Dynamics Research</i> , 1998 , 23, 113-124	1.2	2
17	Effect of microbubble-induced cavitation on the dispersion of sprays. <i>Physical Review Fluids</i> , 2017 , 2,	2.8	2
16	On the Oceanic Circulation Near a Shelf-Ice Edge. <i>Glaciology and Quaternary Geology</i> , 1987 , 37-56		2
15	High-resolution single-camera photogrammetry: incorporation of refraction at a fluid interface. <i>Experiments in Fluids</i> , 2020 , 61, 1	2.5	2
14	Experiments and simulations on self-organization of confined quasi-two-dimensional turbulent flows with discontinuous topography. <i>Physics of Fluids</i> , 2010 , 22, 025101	4.4	1
13	Stability and transport properties of multiple-patch quasiequilibria. <i>Physics of Fluids</i> , 2004 , 16, 3656-3669	4.4	1

- 12 Spin-up in a rectangular container with an internal cylindrical obstacle. *Physics of Fluids*, **2000**, 12, 1986-1996 1
- 11 An analytical model for ice-edge upwelling. *Geophysical and Astrophysical Fluid Dynamics*, **1984**, 29, 155-177 1
- 10 A Note on the Effects of Solid Boundaries on Confined Decaying 2D Turbulence **2003**, 305-324 1
- 9 Wavelength selection of vortex ripples in an oscillating cylinder: The effect of curvature and background rotation. *Physical Review E*, **2019**, 99, 033105 2.4
- 8 Dispersion and Mixing in Quasi-two-dimensional Rotating Flows **2008**, 119-136
- 7 The Okubo-Weiss criterion in hydrodynamic flows: geometric aspects and further extension. *Fluid Dynamics Research*, **2022**, 54, 015505 1.2
- 6 Spin-Up in Non-Axisymmetric Containers **1993**, 155-162
- 5 Self-Organization Phenomena in 2D-Flows. *Fluid Mechanics and Its Applications*, **1996**, 355-363 0.2
- 4 The 3D structure of a dipole in a shallow two-layer fluid. *Springer Proceedings in Physics*, **2009**, 289-292 0.2
- 3 The 3D character of decaying turbulence in a shallow fluid layer. *Springer Proceedings in Physics*, **2009**, 293-296 0.2
- 2 The minimum-entropy principle for decaying 2D turbulence in circular domains. *Springer Proceedings in Physics*, **2009**, 257-260 0.2
- 1 Decreasing luminescence lifetime of evaporating phosphorescent droplets. *Applied Physics Letters*, **2016**, 109, 234103 3.4