

# Willem Hundsdorfer

## List of Publications by Year in descending order

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49  
papers

2,882  
citations

257450

24  
h-index

206112

48  
g-index

50  
all docs

50  
docs citations

50  
times ranked

1819  
citing authors

#	ARTICLE	IF	CITATIONS
1	Numerical Solution of Time-Dependent Advection-Diffusion-Reaction Equations. Springer Series in Computational Mathematics, 2003, , .	0.2	708
2	The multiscale nature of streamers. Plasma Sources Science and Technology, 2006, 15, S118-S129.	3.1	200
3	A Positive Finite-Difference Advection Scheme. Journal of Computational Physics, 1995, 117, 35-46.	3.8	165
4	A Second-Order Rosenbrock Method Applied to Photochemical Dispersion Problems. SIAM Journal of Scientific Computing, 1999, 20, 1456-1480.	2.8	156
5	Spontaneous Branching of Anode-Directed Streamers between Planar Electrodes. Physical Review Letters, 2002, 88, 174502.	7.8	142
6	IMEX extensions of linear multistep methods with general monotonicity and boundedness properties. Journal of Computational Physics, 2007, 225, 2016-2042.	3.8	121
7	On the stability of implicit-explicit linear multistep methods. Applied Numerical Mathematics, 1997, 25, 193-205.	2.1	118
8	RKC time-stepping for advectionâ€“diffusionâ€“reaction problems. Journal of Computational Physics, 2004, 201, 61-79.	3.8	110
9	An adaptive grid refinement strategy for the simulation of negative streamers. Journal of Computational Physics, 2006, 219, 801-835.	3.8	98
10	A multirate time stepping strategy for stiff ordinary differential equations. BIT Numerical Mathematics, 2007, 47, 137-155.	2.0	85
11	Monotonicity-Preserving Linear Multistep Methods. SIAM Journal on Numerical Analysis, 2003, 41, 605-623.	2.3	78
12	An implicit-explicit approach for atmospheric transport-chemistry problems. Applied Numerical Mathematics, 1996, 20, 191-209.	2.1	69
13	3D hybrid computations for streamer discharges and production of runaway electrons. Journal Physics D: Applied Physics, 2009, 42, 202003.	2.8	68
14	Method of lines and direct discretization: a comparison for linear advection. Applied Numerical Mathematics, 1994, 13, 469-490.	2.1	61
15	High-order linear multistep methods with general monotonicity and boundedness properties. Journal of Computational Physics, 2005, 209, 226-248.	3.8	61
16	Spatially hybrid computations for streamer discharges with generic features of pulled fronts: I. Planar fronts. Journal of Computational Physics, 2010, 229, 200-220.	3.8	58
17	Accuracy and stability of splitting with Stabilizing Corrections. Applied Numerical Mathematics, 2002, 42, 213-233.	2.1	53
18	Spatially hybrid computations for streamer discharges : II. Fully 3D simulations. Journal of Computational Physics, 2012, 231, 1020-1050.	3.8	53

#	ARTICLE	IF	CITATIONS
19	Tunneling-assisted impact ionization fronts in semiconductors. <i>Journal of Applied Physics</i> , 2002, 92, 958-964.	2.5	52
20	Superfast fronts of impact ionization in initially unbiased layered semiconductor structures. <i>Journal of Applied Physics</i> , 2002, 92, 1971-1980.	2.5	45
21	A note on splitting errors for advection-reaction equations. <i>Applied Numerical Mathematics</i> , 1995, 18, 191-199.	2.1	40
22	On monotonicity and boundedness properties of linear multistep methods. <i>Mathematics of Computation</i> , 2005, 75, 655-673.	2.1	39
23	Partially Implicit BDF2 Blends for Convection Dominated Flows. <i>SIAM Journal on Numerical Analysis</i> , 2001, 38, 1763-1783.	2.3	32
24	A note on stability of the Douglas splitting method. <i>Mathematics of Computation</i> , 1998, 67, 183-190.	2.1	25
25	Trapezoidal and midpoint splittings for initial-boundary value problems. <i>Mathematics of Computation</i> , 1998, 67, 1047-1063.	2.1	22
26	Implicit–explicit time stepping with spatial discontinuous finite elements. <i>Applied Numerical Mathematics</i> , 2003, 45, 231-254.	2.1	19
27	Analysis of a multirate theta-method for stiff ODEs. <i>Applied Numerical Mathematics</i> , 2009, 59, 693-706.	2.1	18
28	An Efficient Horizontal Advection Scheme for the Modeling of Global Transport of Constituents. <i>Monthly Weather Review</i> , 1995, 123, 3554-3564.	1.4	17
29	Unconditional convergence of some Crank-Nicolson LOD methods for initial-boundary value problems. <i>Mathematics of Computation</i> , 1992, 58, 35-35.	2.1	15
30	A numerical study for global atmospheric transport–chemistry problems. <i>Mathematics and Computers in Simulation</i> , 1998, 48, 177-204.	4.4	14
31	Stepsize Restrictions for Boundedness and Monotonicity of Multistep Methods. <i>Journal of Scientific Computing</i> , 2012, 50, 265-286.	2.3	14
32	Modified Douglas splitting methods for reaction–diffusion equations. <i>BIT Numerical Mathematics</i> , 2017, 57, 261-285.	2.0	13
33	Extrapolation-based super-convergent implicit-explicit Peer methods with A-stable implicit part. <i>Journal of Computational Physics</i> , 2018, 367, 121-133.	3.8	11
34	On the error of general linear methods for stiff dissipative differential equations. <i>IMA Journal of Numerical Analysis</i> , 1994, 14, 363-379.	2.9	9
35	Stepsize Conditions for Boundedness in Numerical Initial Value Problems. <i>SIAM Journal on Numerical Analysis</i> , 2009, 47, 3797-3819.	2.3	9
36	Extrapolation-based implicit–explicit Peer methods with optimised stability regions. <i>Journal of Computational Physics</i> , 2017, 337, 203-215.	3.8	9

#	ARTICLE	IF	CITATIONS
37	Boundedness and strong stability of Runge-Kutta methods. <i>Mathematics of Computation</i> , 2011, 80, 863-863.	2.1	8
38	Error Analysis of Explicit Partitioned Runge-Kutta Schemes for Conservation Laws. <i>Journal of Scientific Computing</i> , 2015, 63, 633-653.	2.3	8
39	A note on iterated splitting schemes. <i>Journal of Computational and Applied Mathematics</i> , 2007, 201, 146-152.	2.0	7
40	Simulated Avalanche Formation Around Streamers in an Overvolted Air Gap. <i>IEEE Transactions on Plasma Science</i> , 2011, 39, 2256-2257.	1.3	7
41	Special boundedness properties in numerical initial value problems. <i>BIT Numerical Mathematics</i> , 2011, 51, 909-936.	2.0	7
42	Stability of Approximate Factorization with $\hat{L}_s$ -Methods. <i>BIT Numerical Mathematics</i> , 1999, 39, 473-483.	2.0	6
43	Positivity for explicit two-step methods in linear multistep and one-leg form. <i>BIT Numerical Mathematics</i> , 2006, 46, 875-882.	2.0	6
44	Monotonicity Conditions for Multirate and Partitioned Explicit Runge-Kutta Schemes. <i>Notes on Numerical Fluid Mechanics and Multidisciplinary Design</i> , 2013, , 177-195.	0.3	6
45	On Multistep Stabilizing Correction Splitting Methods with Applications to the Heston Model. <i>SIAM Journal of Scientific Computing</i> , 2018, 40, A1408-A1429.	2.8	6
46	Stability estimates based on numerical ranges with an application to a spectral method. <i>BIT Numerical Mathematics</i> , 1994, 34, 228-238.	2.0	5
47	Numerical simulations and conformal analysis of growing and branching negative discharge streamers. <i>IEEE Transactions on Plasma Science</i> , 2005, 33, 260-261.	1.3	5
48	A note on flux limiting for diffusion discretizations. <i>IMA Journal of Numerical Analysis</i> , 2004, 24, 635-642.	2.9	4
49	Comparison of boundedness and monotonicity properties of one-leg and linear multistep methods. <i>Journal of Computational and Applied Mathematics</i> , 2015, 279, 159-172.	2.0	0