Gianmarco Manzini

List of Publications by Year
in descending order

109	4,688	117453	106150
papers	citations	34 h-index	65 g-index

125	125	125	1443
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	BASIC PRINCIPLES OF VIRTUAL ELEMENT METHODS. Mathematical Models and Methods in Applied Sciences, 2013, 23, 199-214.	1.7	936
2	Mimetic finite difference method. Journal of Computational Physics, 2014, 257, 1163-1227.	1.9	332
3	Discontinuous Galerkin approximations for elliptic problems. Numerical Methods for Partial Differential Equations, 2000, 16, 365-378.	2.0	277
4	The nonconforming virtual element method. ESAIM: Mathematical Modelling and Numerical Analysis, 2016, 50, 879-904.	0.8	192
5	New perspectives on polygonal and polyhedral finite element methods. Mathematical Models and Methods in Applied Sciences, 2014, 24, 1665-1699.	1.7	132
6	The NonConforming Virtual Element Method for the Stokes Equations. SIAM Journal on Numerical Analysis, 2016, 54, 3411-3435.	1.1	122
7	A virtual element method with arbitrary regularity. IMA Journal of Numerical Analysis, 2014, 34, 759-781.	1.5	105
8	The fully nonconforming virtual element method for biharmonic problems. Mathematical Models and Methods in Applied Sciences, 2018, 28, 387-407.	1.7	102
9	Mass-conservative finite volume methods on 2-D unstructured grids for the Richardsâ€™ equation. Advances in Water Resources, 2004, 27, 1199-1215.	1.7	101
10	Arbitrary-Order Nodal Mimetic Discretizations of Elliptic Problems on Polygonal Meshes. SIAM Journal on Numerical Analysis, 2011, 49, 1737-1760.	1.1	95
11	The Mimetic Finite Difference Method for Elliptic Problems. , 2014, , .		91
12	A Second-Order Maximum Principle Preserving Finite Volume Method for Steady Convection-Diffusion Problems. SIAM Journal on Numerical Analysis, 2005, 43, 2172-2199.	1.1	86
13	Residuala posteriorierror estimation for the Virtual Element Method for elliptic problems. ESAIM: Mathematical Modelling and Numerical Analysis, 2015, 49, 577-599.	0.8	84
14	Mimetic finite difference method for the Stokes problem on polygonal meshes. Journal of Computational Physics, 2009, 228, 7215-7232.	1.9	77
15	Hourglass stabilization and the virtual element method. International Journal for Numerical Methods in Engineering, 2015, 102, 404-436.	1.5	74
16	ON VERTEX RECONSTRUCTIONS FOR CELL-CENTERED FINITE VOLUME APPROXIMATIONS OF 2D ANISOTROPIC DIFFUSION PROBLEMS. Mathematical Models and Methods in Applied Sciences, 2007, 17, 1-32.	1.7	66
17	A finite volume method for advectionâ€“diffusion problems in convection-dominated regimes. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 1242-1261.	3.4	65
18	A CELL-CENTERED SECOND-ORDER ACCURATE FINITE VOLUME METHOD FOR CONVECTIONâ€“DIFFUSION PROBLEMS ON UNSTRUCTURED MESHES. Mathematical Models and Methods in Applied Sciences, 2004, 14, 1235-1260.	1.7	58

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19	Analysis of the monotonicity conditions in the mimetic finite difference method for elliptic problems. Journal of Computational Physics, 2011, 230, 2620-2642.	1.9	58
20	Flux reconstruction and solution post-processing in mimetic finite difference methods. Computer Methods in Applied Mechanics and Engineering, 2008, 197, 933-945.	3.4	55
21	Convergence analysis of the high-order mimetic finite difference method. Numerische Mathematik, 2009, 113, 325-356.	0.9	54
22	Convergence Analysis of the Mimetic Finite Difference Method for Elliptic Problems. SIAM Journal on Numerical Analysis, 2009, 47, 2612-2637.	1.1	52
23	The Discrete Duality Finite Volume Method for Convection-diffusion Problems. SIAM Journal on Numerical Analysis, 2010, 47, 4163-4192.	1.1	52
24	The mimetic finite difference method for the 3D magnetostatic field problems on polyhedral meshes. Journal of Computational Physics, 2011, 230, 305-328.	1.9	51
25	A Higher-Order Formulation of the Mimetic Finite Difference Method. SIAM Journal of Scientific Computing, 2008, 31, 732-760.	1.3	49
26	Discontinuous Skeletal Gradient Discretisation methods on polytopal meshes. Journal of Computational Physics, 2018, 355, 397-425.	1.9	46
27	A Mixed Finite Element--Finite Volume Formulation of the Black-Oil Model. SIAM Journal of Scientific Computing, 1998, 20, 970-997.	1.3	45
28	An a posteriori error estimator for the mimetic finite difference approximation of elliptic problems. International Journal for Numerical Methods in Engineering, 2008, 76, 1696-1723.	1.5	44
29	3D Benchmark on Discretization Schemes for Anisotropic Diffusion Problems on General Grids. Springer Proceedings in Mathematics, 2011, , 895-930.	0.5	44
30	A unified approach for handling convection terms in finite volumes and mimetic discretization methods for elliptic problems. IMA Journal of Numerical Analysis, 2011, 31, 1357-1401.	1.5	44
31	Mesh locking effects in the finite volume solution of 2-D anisotropic diffusion equations. Journal of Computational Physics, 2007, 220, 751-771.	1.9	42
32	SUPG stabilization for the nonconforming virtual element method for advectionâ€“diffusionâ€“reaction equations. Computer Methods in Applied Mechanics and Engineering, 2018, 340, 500-529.	3.4	42
33	The nonconforming Virtual Element Method for eigenvalue problems. ESAIM: Mathematical Modelling and Numerical Analysis, 2019, 53, 749-774.	0.8	42
34	Error Analysis for a Mimetic Discretization of the Steady Stokes Problem on Polyhedral Meshes. SIAM Journal on Numerical Analysis, 2010, 48, 1419-1443.	1.1	41
35	A high-order mimetic method on unstructured polyhedral meshes for the diffusion equation. Journal of Computational Physics, 2014, 272, 360-385.	1.9	40
36	The virtual element method for eigenvalue problems with potential terms on polytopic meshes. , 2018, 63, 333-365.		36

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37	Conforming and nonconforming virtual element methods for elliptic problems. IMA Journal of Numerical Analysis, 0, , drw036.	1.5	31
38	Extended virtual element method for the Laplace problem with singularities and discontinuities. Computer Methods in Applied Mechanics and Engineering, 2019, 356, 571-597.	3.4	31
39	The conforming virtual element method for polyharmonic problems. Computers and Mathematics With Applications, 2020, 79, 2021-2034.	1.4	31
40	Convergence of the mimetic finite difference method for eigenvalue problems in mixed form. Computer Methods in Applied Mechanics and Engineering, 2011, 200, 1150-1160.	3.4	30
41	A Legendreâ€“Fourier spectral method with exact conservation laws for the Vlasovâ€“Poisson system. Journal of Computational Physics, 2016, 317, 82-107.	1.9	30
42	A posteriori error estimation and adaptivity in hp virtual elements. Numerische Mathematik, 2019, 143, 139-175.	0.9	30
43	The p- and hp-versions of the virtual element method for elliptic eigenvalue problems. Computers and Mathematics With Applications, 2020, 79, 2035-2056.	1.4	30
44	Mimetic scalar products of discrete differential forms. Journal of Computational Physics, 2014, 257, 1228-1259.	1.9	29
45	The mimetic finite difference method for elliptic and parabolic problems with a staggered discretization of diffusion coefficient. Journal of Computational Physics, 2016, 305, 111-126.	1.9	25
46	Algorithm 817: P2MESH. ACM Transactions on Mathematical Software, 2002, 28, 101-132.	1.6	24
47	A multiresolution approach for page segmentation. Pattern Recognition Letters, 1998, 19, 217-225.	2.6	23
48	The Discrete Duality Finite Volume Method for Stokes Equations on Three-Dimensional Polyhedral Meshes. SIAM Journal on Numerical Analysis, 2012, 50, 808-837.	1.1	23
49	The arbitraryâ€order virtual element method for linear elastodynamics models: convergence, stability and dispersionâ€dissipation analysis. International Journal for Numerical Methods in Engineering, 2021, 122, 934-971.	1.5	20
50	Virtual elements for Maxwell's equations. Computers and Mathematics With Applications, 2022, 116, 82-99.	1.4	20
51	Fast-secant algorithms for the non-linear Richards equation. Communications in Numerical Methods in Engineering, 1998, 14, 921-930.	1.3	19
52	A null space algorithm for mixed finite-element approximations of Darcy's equation. Communications in Numerical Methods in Engineering, 2002, 18, 645-657.	1.3	19
53	M-Adaptation in the mimetic finite difference method. Mathematical Models and Methods in Applied Sciences, 2014, 24, 1621-1663.	1.7	19
54	SpectralPlasmaSolver: a Spectral Code for Multiscale Simulations of Collisionless, Magnetized Plasmas. Journal of Physics: Conference Series, 2016, 719, 012022.	0.3	19

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55	Coupling surface flow and subsurface flow in complex soil structures using mimetic finite differences. Advances in Water Resources, 2020, 144, 103701.	1.7	19
56	The role of mesh quality and mesh quality indicators in the virtual element method. Advances in Computational Mathematics, 2022, 48, 1.	0.8	19
57	2-D Numerical Modeling of Bioremediation in Heterogeneous Saturated Soils. Transport in Porous Media, 1998, 31, 67-88.	1.2	18
58	A mixed finite element/finite volume approach for solving biodegradation transport in groundwater. International Journal for Numerical Methods in Fluids, 1998, 26, 533-556.	0.9	17
59	A fully coupled numerical model for two-phase flow with contaminant transport and biodegradation kinetics. Communications in Numerical Methods in Engineering, 2001, 17, 325-336.	1.3	16
60	Post processing of solution and flux for the nodal mimetic finite difference method. Numerical Methods for Partial Differential Equations, 2015, 31, 336-363.	2.0	16
61	A review on arbitrarily regular conforming virtual element methods for second- and higher-order elliptic partial differential equations. Mathematical Models and Methods in Applied Sciences, 2021, 31, 2825-2853.	1.7	15
62	A unified treatment of boundary conditions in least-square based finite-volume methods. Computers and Mathematics With Applications, 2005, 49, 1755-1765.	1.4	14
63	Convergence Analysis of the mimetic Finite Difference Method for Elliptic Problems with Staggered Discretizations of Diffusion Coefficients. SIAM Journal on Numerical Analysis, 2017, 55, 2956-2981.	1.1	14
64	Recent techniques for PDE discretizations on polyhedral meshes. Mathematical Models and Methods in Applied Sciences, 2014, 24, 1453-1455.	1.7	13
65	The arbitrary order mixed mimetic finite difference method for the diffusion equation. ESAIM: Mathematical Modelling and Numerical Analysis, 2016, 50, 851-877.	0.8	13
66	A fourth-order phase-field fracture model: Formulation and numerical solution using a continuous/discontinuous Galerkin method. Journal of the Mechanics and Physics of Solids, 2022, 165, 104910.	2.3	13
67	Convergence of Spectral Discretizations of the Vlasov–Poisson System. SIAM Journal on Numerical Analysis, 2017, 55, 2312-2335.	1.1	12
68	Limiting strategies for polynomial reconstructions in the finite volume approximation of the linear advection equation. Applied Numerical Mathematics, 2004, 49, 277-289.	1.2	11
69	Least square-based finite volumes for solving the advectionâ€“diffusion of contaminants in porous media. Applied Numerical Mathematics, 2004, 51, 451-461.	1.2	11
70	Advantages of a multi-state approach in surgical research: how intermediate events and risk factor profile affect the prognosis of a patient with locally advanced rectal cancer. BMC Medical Research Methodology, 2018, 18, 23.	1.4	11
71	Extended virtual element method for two-dimensional linear elastic fracture. Computer Methods in Applied Mechanics and Engineering, 2022, 390, 114352.	3.4	11
72	The multi-dimensional Hermite-discontinuous Galerkin method for the Vlasovâ€“Maxwell equations. Computer Physics Communications, 2021, 264, 107866.	3.0	10

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73	Null Space Algorithm and Spanning Trees in Solving Darcy's Equation. BIT Numerical Mathematics, 2003, 43, 839-848.	1.0	9
74	Finite volume/mixed finite element analysis of pollutant transport and bioremediation in heterogeneous saturated aquifers. International Journal for Numerical Methods in Fluids, 2003, 42, 1-21.	0.9	9
75	Bad behavior of Godunov mixed methods for strongly anisotropic advectionâ€“dispersion equations. Journal of Computational Physics, 2011, 230, 8410-8426.	1.9	9
76	The virtual element method for resistive magnetohydrodynamics. Computer Methods in Applied Mechanics and Engineering, 2021, 381, 113815.	3.4	9
77	Stabilization of the nonconforming virtual element method. Computers and Mathematics With Applications, 2022, 116, 25-47.	1.4	9
78	Polyhedral mesh quality indicator for the Virtual Element Method. Computers and Mathematics With Applications, 2022, 114, 151-160.	1.4	9
79	A Triangle-Based Unstructured Finite-Volume Method for Chemically Reactive Hypersonic Flows. Journal of Computational Physics, 2001, 166, 84-115.	1.9	8
80	Arbitrary-order time-accurate semi-Lagrangian spectral approximations of the Vlasovâ€“Poisson system. Journal of Computational Physics, 2019, 384, 349-375.	1.9	8
81	A finite volume method for transport of contaminants in porous media. Applied Numerical Mathematics, 2004, 49, 291-305.	1.2	7
82	A Semi-Lagrangian Spectral Method for the Vlasovâ€“Poisson System Based on Fourier, Legendre and Hermite Polynomials. Communications on Applied Mathematics and Computation, 2019, 1, 333-360.	0.7	7
83	Parallel Implementations of 2D Explicit Euler Solvers. Journal of Computational Physics, 1996, 123, 111-118.	1.9	6
84	Virtual element approximation of two-dimensional parabolic variational inequalities. Computers and Mathematics With Applications, 2022, 116, 48-70.	1.4	6
85	A CeVeFE DDFV scheme for discontinuous anisotropic permeability tensors. Springer Proceedings in Mathematics, 2011, , 283-291.	0.5	6
86	Benchmark 3D: CeVeFE-DDFV, a discrete duality scheme with cell/vertex/face+edge unknowns. Springer Proceedings in Mathematics, 2011, , 977-984.	0.5	5
87	A virtual element generalization on polygonal meshes of the Scott-Vogelius finite element method for the 2-D Stokes problem. Journal of Computational Dynamics, 2022, 9, 207.	0.4	5
88	Monotonicity Conditions in the Mimetic Finite Difference Method. Springer Proceedings in Mathematics, 2011, , 653-661.	0.5	4
89	DIMEX Rungeâ€“Kutta finite volume methods for multidimensional hyperbolic systems. Mathematics and Computers in Simulation, 2007, 75, 141-160.	2.4	3
90	EFFICIENT DESIGN OF RESIDUAL-BASED STABILIZATION TECHNIQUES FOR THE THREE FIELDS DOMAIN DECOMPOSITION METHOD. Mathematical Models and Methods in Applied Sciences, 2008, 18, 973-999.	1.7	3

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91	An efficient and conservative hybrid method for solving multidimensional conservation laws. Numerical Methods for Partial Differential Equations, 2009, 25, 1029-1066.	2.0	3
92	On the Use of Hermite Functions for the Vlasovâ€“Poisson System. Lecture Notes in Computational Science and Engineering, 2020, , 143-153.	0.1	3
93	Discretization of Mixed Formulations of Elliptic Problems on Polyhedral Meshes. Lecture Notes in Computational Science and Engineering, 2016, , 311-342.	0.1	2
94	Stability and Conservation Properties of Hermite-Based Approximations of the Vlasov-Poisson System. Journal of Scientific Computing, 2021, 88, 1.	1.1	2
95	Arbitrary-order intrinsic virtual element method for elliptic equations on surfaces. Calcolo, 2021, 58, 30.	0.6	2
96	Benchmark 3D: Mimetic Finite Difference Method for Generalized Polyhedral Meshes. Springer Proceedings in Mathematics, 2011, , 1035-1042.	0.5	2
97	Conforming virtual element approximations of the two-dimensional Stokes problem. Applied Numerical Mathematics, 2022, 181, 176-203.	1.2	2
98	Distributed Parallel Strategies for Industrial CFD Solvers: A Case Study and Analysis of Performances. Journal of Parallel and Distributed Computing, 1999, 57, 334-344.	2.7	1
99	An object-oriented interface for the dynamic memory management of sparse discrete mathematical operators in numerical scientific applications. Software - Practice and Experience, 2002, 32, 621-644.	2.5	1
100	A mixed finite element solver for liquid-liquid impacts. Communications in Numerical Methods in Engineering, 2004, 20, 595-606.	1.3	1
101	A second-order TVD implicitâ€“explicit finite volume method for time-dependent convection-reaction equations. Mathematics and Computers in Simulation, 2009, 79, 2403-2428.	2.4	1
102	Spanning traceroutes over modular networks and general scaling degree distributions. Physical Review E, 2010, 81, 036105.	0.8	1
103	The High-Order Mixed Mimetic Finite Difference Method for Time-Dependent Diffusion Problems. Journal of Scientific Computing, 2019, 80, 1805-1830.	1.1	1
104	Benchmark 3D: The Cell-Centered Finite Volume Method Using Least Squares Vertex Reconstruction (â€œDiamond Schemeâ€). Springer Proceedings in Mathematics, 2011, , 985-992.	0.5	1
105	Nonnegative canonical tensor decomposition with linear constraints: nnCANDELINC. Numerical Linear Algebra With Applications, 2022, 29, .	0.9	1
106	A Decision-Making Machine Learning Approach in Hermite Spectral Approximations of Partial Differential Equations. Journal of Scientific Computing, 2022, 92, .	1.1	1
107	Computer modeling of liquidâ€“solid impacts. Mathematical and Computer Modelling, 2007, 45, 162-176.	2.0	0
108	The Mixed Virtual Element Method for the Richards Equation. SEMA SIMAI Springer Series, 2021, , 259-297.	0.4	0

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109	Arbitrary order nodal mimetic discretizations of elliptic problems on polygonal meshes. Springer Proceedings in Mathematics, 2011, , 69-77.	0.5	0