Mario Putti

List of Publications by Year
in descending order

120 papers	3,761 citations	172457 29 h-index	149698 56 g-index
121 all docs	121 docs citations	121 times ranked	3247 citing authors

#	Article	IF	Citations
1	Surfaceâ€subsurface flow modeling with pathâ€based runoff routing, boundary conditionâ€based coupling, and assimilation of multisource observation data. Water Resources Research, 2010, 46, .	4.2	289
2	A comparison of Picard and Newton iteration in the numerical solution of multidimensional variably saturated flow problems. Water Resources Research, 1994, 30, 3357-3374.	4.2	279
3	Surfaceâ€subsurface model intercomparison: A first set of benchmark results to diagnose integrated hydrology and feedbacks. Water Resources Research, 2014, 50, 1531-1549.	4.2	222
4	Physically based modeling in catchment hydrology at 50: Survey and outlook. Water Resources Research, 2015, 51, 7090-7129.	4.2	193
5	Mixed finite elements and Newton-type linearizations for the solution of Richards' equation. International Journal for Numerical Methods in Engineering, 1999, 45, 1025-1046.	2.8	125
6	The integrated hydrologic model intercomparison project, <scp>IHâ€MIP2</scp>: A second set of benchmark results to diagnose integrated hydrology and feedbacks. Water Resources Research, 2017, 53, 867-890.	4.2	113
7	A comparison of two physics-based numerical models for simulating surface waterâ€“groundwater interactions. Advances in Water Resources, 2010, 33, 456-467.	3.8	108
8	Spatial organization and ecohydrological interactions in oxygen-limited vegetation ecosystems. Water Resources Research, 2006, 42, .	4.2	92
9	Ensemble Kalman filter data assimilation for a processâ€based catchment scale model of surface and subsurface flow. Water Resources Research, 2009, 45, .	4.2	85
10	Mixed finite elements and Newtonâ€type linearizations for the solution of Richards' equation. International Journal for Numerical Methods in Engineering, 1999, 45, 1025-1046.	2.8	81
11	Subsidence due to peat oxidation and impact on drainage infrastructures in a farmland catchment south of the Venice Lagoon. Environmental Geology, 2006, 49, 814-820.	1.2	77
12	Coupling water flow and solute transport into a physically-based surfaceâ€“subsurface hydrological model. Advances in Water Resources, 2011, 34, 128-136.	3.8	70
13	Newtonian nudging for a Richards equation-based distributed hydrological model. Advances in Water Resources, 2003, 26, 161-178.	3.8	60
14	Tree root systems competing for soil moisture in a 3D soilâ€“plant model. Advances in Water Resources, 2014, 66, 32-42.	3.8	59
15	Ensemble Kalman filter versus particle filter for a physically-based coupled surfaceâ€“subsurface model. Advances in Water Resources, 2012, 47, 1-13.	3.8	57
16	Hydrological modeling in swelling/shrinking peat soils. Water Resources Research, 2006, 42, .	4.2	56
17	Snapshot selection for groundwater model reduction using proper orthogonal decomposition. Water Resources Research, 2010, 46, .	4.2	54
18	Picard and Newton linearization for the coupled model for saltwater intrusion in aquifers. Advances in Water Resources, 1995, 18, 159-170.	3.8	53

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19	Finite Element Approximation of the Diffusion Operator on Tetrahedra. SIAM Journal of Scientific Computing, 1998, 19, 1154-1168.	2.8	53
20	Modeling meander morphodynamics over selfâ€formed heterogeneous floodplains. Water Resources Research, 2017, 53, 5137-5157.	4.2	51
21	A triangular finite volume approach with high resolution upwind terms for the solution of groundwater transport equations. Water Resources Research, 1990, 26, 2865-2880.	4.2	51
22	Peat land oxidation enhances subsidence in the Venice watershed. Eos, 2005, 86, 217.	0.1	47
23	Modeling groundwater-surface water interactions including effects of morphogenetic depressions in the Chernobyl exclusion zone. Environmental Geology, 2002, 42, 162-177.	1.2	43
24	Mesh locking effects in the finite volume solution of 2-D anisotropic diffusion equations. Journal of Computational Physics, 2007, 220, 751-771.	3.8	42
25	A tracer test in a shallow heterogeneous aquifer monitored via time-lapse surface electrical resistivity tomography. Geophysics, 2010, 75, WA61-WA73.	2.6	42
26	Soilâ€“plant interaction monitoring: Small scale example of an apple orchard in Trentino, North-Eastern Italy. Science of the Total Environment, 2016, 543, 851-861.	8.0	39
27	Saturated area dynamics and streamflow generation from coupled surfaceâ€“subsurface simulations and field observations. Advances in Water Resources, 2013, 59, 196-208.	3.8	36
28	Long term peatland subsidence: Experimental study and modeling scenarios in the Venice coastland. Journal of Geophysical Research, 2011, 116, .	3.3	33
29	Saving Venice by seawater. Journal of Geophysical Research, 2004, 109, .	3.3	31
30	Assessment of adaptive and heuristic time stepping for variably saturated flow. International Journal for Numerical Methods in Fluids, 2007, 53, 1173-1193.	1.6	31
31	A reduced-order model for groundwater flow equation with random hydraulic conductivity: Application to Monte Carlo methods. Water Resources Research, 2013, 49, 3215-3228.	4.2	31
32	An iterative particle filter approach for coupled hydro-geophysical inversion of a controlled infiltration experiment. Journal of Computational Physics, 2015, 283, 37-51.	3.8	30
33	A Triangular Finite Volume Approach With Highâ€Resolution Upwind Terms for the Solution of Groundwater Transport Equations. Water Resources Research, 1990, 26, 2865-2880.	4.2	29
34	A Time-Splitting Technique for the Advection-Dispersion Equation in Groundwater. Journal of Computational Physics, 2000, 157, 181-198.	3.8	29
35	High order Godunov mixed methods on tetrahedral meshes for density driven flow simulations in porous media. Journal of Computational Physics, 2005, 208, 154-174.	3.8	29
36	Climate signal propagation in southern California aquifers. Water Resources Research, 2010, 46, .	4.2	29

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37	Anthropogenic Venice uplift by seawater pumping into a heterogeneous aquifer system. Water Resources Research, 2010, 46, .	4.2	29
38	POD-based Monte Carlo approach for the solution of regional scale groundwater flow driven by randomly distributed recharge. Advances in Water Resources, 2011, 34, 1450-1463.	3.8	29
39	Incipient subsurface heterogeneity and its effect on overland flow generation â€“ insight from a modeling study of the first experiment at the Biosphere 2 Landscape Evolution Observatory. Hydrology and Earth System Sciences, 2014, 18, 1873-1883.	4.9	29
40	Numerical comparison of iterative eigensolvers for large sparse symmetric positive definite matrices. Computer Methods in Applied Mechanics and Engineering, 2002, 191, 5233-5247.	6.6	28
41	Plantâ€soil interactions in salt marsh environments: Experimental evidence from electrical resistivity tomography in the Venice Lagoon. Geophysical Research Letters, 2014, 41, 6160-6166.	4.0	28
42	Fill and Spill Hillslope Runoff Representation With a Richards Equationâ€Based Model. Water Resources Research, 2019, 55, 8445-8462.	4.2	28
43	Title is missing!. Transport in Porous Media, 2001, 43, 65-86.	2.6	26
44	Comparison of Data Assimilation Techniques for a Coupled Model of Surface and Subsurface Flow. Vadose Zone Journal, 2009, 8, 837-845.	2.2	26
45	Coupled inverse modeling of a controlled irrigation experiment using multiple hydro-geophysical data. Advances in Water Resources, 2015, 82, 150-165.	3.8	26
46	Can Venice be raised by pumping water underground? A pilot project to help decide. Water Resources Research, 2008, 44, .	4.2	24
47	Towards a Stationary Monge–Kantorovich Dynamics: The Physarum Polycephalum Experience. SIAM Journal on Applied Mathematics, 2018, 78, 651-676.	1.8	24
48	Mixed-finite element and finite volume discretization for heavy brine simulations in groundwater. Journal of Computational and Applied Mathematics, 2002, 147, 191-213.	2.0	23
49	On the accuracy of classic numerical schemes for modeling flow in saturated heterogeneous formations. Advances in Water Resources, 2012, 47, 43-55.	3.8	23
50	The influence of water table depth and the free atmospheric state on convective rainfall predisposition. Water Resources Research, 2015, 51, 2283-2297.	4.2	23
51	Observation and modeling of catchmentâ€scale solute transport in the hydrologic response: A tracer study. Water Resources Research, 2008, 44, .	4.2	21
52	Reduced order parameter estimation using quasilinearization and quadratic programming. Water Resources Research, 2012, 48, .	4.2	21
53	Impact of sensor failure on the observability of flow dynamics at the Biosphere 2 LEO hillslopes. Advances in Water Resources, 2015, 86, 327-339.	3.8	21
54	Developing food, water and energy nexus workflows. International Journal of Digital Earth, 2020, 13, 299-308.	3.9	21

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55	Three-dimensional mixed finite element-finite volume approach for the solution of density-dependent flow in porous media. Journal of Computational and Applied Mathematics, 2006, 185, 347-359.	2.0	20
56	Alternative conceptual models and the robustness of groundwater management scenarios in the multi-aquifer system of the Central Veneto Basin, Italy. Hydrogeology Journal, 2012, 20, 419-433.	2.1	19
57	Accuracy of Galerkin finite elements for groundwater flow simulations in two and threeâ€dimensional triangulations. International Journal for Numerical Methods in Engineering, 2001, 52, 371-387.	2.8	18
58	Fluid-Dynamic and Geomechanical Effects of CO2 Sequestration below the Venice Lagoon. Environmental and Engineering Geoscience, 2006, 12, 211-226.	0.9	18
59	Multiresponse modeling of variably saturated flow and isotope tracer transport for a hillslope experiment at the Landscape Evolution Observatory. Hydrology and Earth System Sciences, 2016, 20, 4061-4078.	4.9	18
60	Nested Iterations for Symmetric Eigenproblems. SIAM Journal of Scientific Computing, 1995, 16, 173-191.	2.8	17
61	Examination of the seepage face boundary condition in subsurface and coupled surface/subsurface hydrological models. Water Resources Research, 2017, 53, 1799-1819.	4.2	17
62	Numerical Solution of Mongeâ€“Kantorovich Equations via a Dynamic Formulation. Journal of Scientific Computing, 2020, 82, 1.	2.3	17
63	PARALLEL FINITE ELEMENT LAPLACE TRANSFORM METHOD FOR THE NON-EQUILIBRIUM GROUNDWATER TRANSPORT EQUATION. International Journal for Numerical Methods in Engineering, 1997, 40, 2653-2664.	2.8	16
64	Post processing of solution and flux for the nodal mimetic finite difference method. Numerical Methods for Partial Differential Equations, 2015, 31, 336-363.	3.6	16
65	Godunov Mixed Methods on Triangular Grids for Advectionâ€“Dispersion Equations. Computational Geosciences, 2002, 6, 123-139.	2.4	15
66	A realâ€time groundwater management model using data assimilation. Water Resources Research, 2011, 47, .	4.2	15
67	Linear Galerkin vs mixed finite element 2D flow fields. International Journal for Numerical Methods in Fluids, 2009, 60, 1011-1031.	1.6	14
68	A reduced-order model for Monte Carlo simulations of stochastic groundwater flow. Computational Geosciences, 2014, 18, 157-169.	2.4	14
69	Modeling shallow water flows on general terrains. Advances in Water Resources, 2018, 121, 316-332.	3.8	14
70	Can CO2help save Venice from the Sea?. Eos, 2003, 84, 546.	0.1	13
71	Time step and stability control for a coupled model of surface and subsurface flow. Developments in Water Science, 2004, 55, 1391-1402.	0.1	13
72	Mass-conservative reconstruction of Galerkin velocity fields for transport simulations. Advances in Water Resources, 2016, 94, 470-485.	3.8	13

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73	Flow dynamics in hyper-saline aquifers: hydro-geophysical monitoring and modeling. Hydrology and Earth System Sciences, 2017, 21, 1439-1454.	4.9	13
74	Intrinsic finite element method for advection-diffusion-reaction equations on surfaces. Journal of Computational Physics, 2021, 424, 109827.	3.8	13
75	A greedy non-intrusive reduced order model for shallow water equations. Journal of Computational Physics, 2021, 439, 110378.	3.8	13
76	Spectral preconditioners for the efficient numerical solution of a continuous branched transport model. Journal of Computational and Applied Mathematics, 2019, 354, 259-270.	2.0	12
77	Network extraction by routing optimization. Scientific Reports, 2020, 10, 20806.	3.3	12
78	Branching structures emerging from a continuous optimal transport model. Journal of Computational Physics, 2021, 447, 110700.	3.8	12
79	A comparison of Lanczos and optimization methods in the partial solution of sparse symmetric eigenproblems. International Journal for Numerical Methods in Engineering, 1994, 37, 605-621.	2.8	11
80	Reply to comment by L. R. Gardner on â€œSpatial organization and ecohydrological interactions in oxygenâ€limited vegetation ecosystemsâ€• Water Resources Research, 2009, 45, .	4.2	11
81	A reduced order modelâ€based preconditioner for the efficient solution of transient diffusion equations. International Journal for Numerical Methods in Engineering, 2017, 109, 1159-1179.	2.8	11
82	Large-Scale Testing of Distributed Temperature Sensing for Early Detection of Piping. Journal of Geotechnical and Geoenvironmental Engineering - ASCE, 2019, 145, .	3.0	11
83	Low-rank update of preconditioners for the nonlinear Richards equation. Mathematical and Computer Modelling, 2013, 57, 1933-1941.	2.0	10
84	On the uniformity of anthropogenic Venice uplift. Terra Nova, 2009, 21, 467-473.	2.1	9
85	Bad behavior of Godunov mixed methods for strongly anisotropic advectionâ€“dispersion equations. Journal of Computational Physics, 2011, 230, 8410-8426.	3.8	9
86	Quasi-Newton acceleration of ILU preconditioners for nonlinear two-phase flow equations in porous media. Advances in Engineering Software, 2012, 46, 63-68.	3.8	9
87	Geometrically intrinsic modeling of shallow water flows. ESAIM: Mathematical Modelling and Numerical Analysis, 2020, 54, 2125-2157.	1.9	9
88	Modeling Soilâ€“Plant Dynamics: Assessing Simulation Accuracy by Comparison with Spatially Distributed Crop Yield Measurements. Vadose Zone Journal, 2015, 14, 1-13.	2.2	8
89	Soil contamination and land subsidence raise concern in the Venice watershed, Italy. WIT Transactions on Ecology and the Environment, 2006, , .	0.0	8
90	Designing optimal networks for multicommodity transport problem. Physical Review Research, 2021, 3, .	3.6	8

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91	Multicommodity routing optimization for engineering networks. Scientific Reports, 2022, 12, 7474.	3.3	8
92	Spatial variability of CO₂efflux in a drained cropped peatland south of Venice, Italy. Journal of Geophysical Research, 2008, 113, .	3.3	7
93	A nudging data assimilation algorithm for the identification of groundwater pumping. Water Resources Research, 2009, 45, .	4.2	7
94	Chapter 23 Peatland subsidence in the Venice watershed. Developments in Earth Surface Processes, 2006, 9, 529-550.	2.8	6
95	A Pilot Project Using Seawater to Uplift Venice Anthropogenically. Eos, 2008, 89, 152-152.	0.1	6
96	Implementation of an exact finite reduction scheme for steady-state reaction-diffusion equations. International Journal for Numerical Methods in Engineering, 2007, 69, 1804-1818.	2.8	5
97	Integration of moment equations in a reduced-order modeling strategy for Monte Carlo simulations of groundwater flow. Journal of Hydrology, 2020, 590, 125257.	5.4	5
98	Krylov Methods in the Finite Element Solution of Groundwater Transport Problems. Water Science and Technology Library, 1994, , 1431-1438.	0.3	5
99	The influence of a confining layer on saltwater intrusion under surface recharge and groundwater extraction conditions. Developments in Water Science, 2002, 47, 493-500.	0.1	4
100	Groundwater Thermal Monitoring to Characterize Streambed Water Fluxes of the Brenta River (Northern Italy). Procedia Environmental Sciences, 2015, 25, 199-205.	1.4	4
101	Numerical Tests of the Lookup Table Method in Solving Richardsâ€™ Equation for Infiltration and Drainage in Heterogeneous Soils. Hydrology, 2017, 4, 33.	3.0	4
102	Combining Models of Root-Zone Hydrology and Geoelectrical Measurements: Recent Advances and Future Prospects. Frontiers in Water, 2021, 3, .	2.3	4
103	Monitoring and Modeling Farmland Productivity Along the Venice Coastland, Italy. Procedia Environmental Sciences, 2013, 19, 361-368.	1.4	3
104	Projection Methods for the Finite Element Solution of the Dual-Porosity Model in Variably Saturated Porous Media. , 2010, , 97-125.		3
105	Modeling peatland hydrology and related elastic deformation. Developments in Water Science, 2004, 55, 1453-1464.	0.1	2
106	Arbitrary-order intrinsic virtual element method for elliptic equations on surfaces. Calcolo, 2021, 58, 30.	1.1	2
107	Numerical Modeling of Contaminant Transport in Groundwater. , 1993, , 381-410.		2
108	Gradient eigenanalysis on nested finite elements. Advances in Engineering Software, 1996, 27, 155-165.	3.8	1

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109	A preliminary numerical model of CO2 sequestration in a normally consolidated sedimentary basin. Developments in Water Science, 2002, , 217-224.	0.1	1
110	Three dimensional Godunov mixed methods on tetrahedra for the advection-dispersion equation. Developments in Water Science, 2002, 47, 381-388.	0.1	1
111	Behavior of the mixed hybrid finite element method for the solution of diffusion equations on unstructured triangulations. Developments in Water Science, 2004, 55, 1053-1064.	0.1	1
112	Spanning traceroutes over modular networks and general scaling degree distributions. Physical Review E, 2010, 81, 036105.	2.1	1
113	The High-Order Mixed Mimetic Finite Difference Method for Time-Dependent Diffusion Problems. Journal of Scientific Computing, 2019, 80, 1805-1830.	2.3	1
114	Thorough wetting and drainage of a peat lysimeter in a climate change scenario. Hydrological Processes, 2020, 34, 1269-1284.	2.6	1
115	Comparison of 3D Flow Fields Arising in Mixed and Standard Unstructured Finite Elements. Lecture Notes in Computer Science, 2003, , 560-567.	1.3	1
116	Modeling the saltwater intrusion in the lowlying catchment of the southern Venice Lagoon, Italy. , 2009, , .		1
117	Assessment of initial solution estimates and adaptive vs. heuristic time stepping for variably saturated flow. Developments in Water Science, 2004, , 545-556.	0.1	0
118	CO2 injection below the Venice Lagoon: a numerical study. Developments in Water Science, 2004, , 827-838.	0.1	0
119	Newton-Type Linearization and Line Search Methods for Unsaturated Flow Models. , 1996, , 155-172.		0
120	Using Heat as a Tracer to Characterize Streambed Water Fluxes of the Brenta River (Italy). , 2015, , 241-244.		0