Steven M Gorelick

List of Publications by Year
in descending order

125 papers	10,457 citations	28274 55 h-index	33894 99 g-index
127 all docs	127 docs citations	127 times ranked	7366 citing authors

#	Article	IF	Citations
1	Multipleâ€Rate Mass Transfer for Modeling Diffusion and Surface Reactions in Media with Poreâ€Scale Heterogeneity. Water Resources Research, 1995, 31, 2383-2400.	4.2	703
2	Earthquake triggering and large-scale geologic storage of carbon dioxide. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 10164-10168.	7.1	626
3	Heterogeneity in Sedimentary Deposits: A Review of Structure-Imitating, Process-Imitating, and Descriptive Approaches. Water Resources Research, 1996, 32, 2617-2658.	4.2	471
4	A review of distributed parameter groundwater management modeling methods. Water Resources Research, 1983, 19, 305-319.	4.2	420
5	Global change and the groundwater management challenge. Water Resources Research, 2015, 51, 3031-3051.	4.2	282
6	Groundwater extraction, land subsidence, and sea-level rise in the Mekong Delta, Vietnam. Environmental Research Letters, 2014, 9, 084010.	5.2	276
7	Identifying sources of groundwater pollution: An optimization approach. Water Resources Research, 1983, 19, 779-790.	4.2	266
8	Optimal groundwater quality management under parameter uncertainty. Water Resources Research, 1987, 23, 1162-1174.	4.2	245
9	Aquifer Reclamation Design: The Use of Contaminant Transport Simulation Combined With Nonlinear Programing. Water Resources Research, 1984, 20, 415-427.	4.2	242
10	Estimation of groundwater consumption by phreatophytes using diurnal water table fluctuations: A saturated-unsaturated flow assessment. Water Resources Research, 2005, 41, .	4.2	241
11	The impact of urbanization on water vulnerability: A coupled humanâ€“environment system approach for Chennai, India. Global Environmental Change, 2013, 23, 229-239.	7.8	238
12	Saline tracer visualized with three-dimensional electrical resistivity tomography: Field-scale spatial moment analysis. Water Resources Research, 2005, 41, .	4.2	220
13	Release of arsenic to deep groundwater in the Mekong Delta, Vietnam, linked to pumping-induced land subsidence. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 13751-13756.	7.1	202
14	Rate-limited mass transfer or macrodispersion: Which dominates plume evolution at the macrodispersion experiment (MADE) site?. Water Resources Research, 2000, 36, 637-650.	4.2	196
15	Fractional packing model for hydraulic conductivity derived from sediment mixtures. Water Resources Research, 1995, 31, 3283-3297.	4.2	192
16	Temporal Moment-Generating Equations: Modeling Transport and Mass Transfer in Heterogeneous Aquifers. Water Resources Research, 1995, 31, 1895-1911.	4.2	169
17	Reliable aquifer remediation in the presence of spatially variable hydraulic conductivity: From data to design. Water Resources Research, 1989, 25, 2211-2225.	4.2	163
18	Quantifying Streamâ^'Aquifer Interactions through the Analysis of Remotely Sensed Thermographic Profiles and In Situ Temperature Histories. Environmental Science & Technology, 2006, 40, 3336-3341.	10.0	159

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19	Analysis of Solute Transport in Flow Fields Influenced by Preferential Flowpaths at the Decimeter Scale. Ground Water, 2003, 41, 142-155.	1.3	149
20	Effective groundwater model parameter values: Influence of spatial variability of hydraulic conductivity, leakance, and recharge. Water Resources Research, 1989, 25, 405-419.	4.2	145
21	Time-lapse imaging of saline-tracer transport in fractured rock using difference-attenuation radar tomography. Water Resources Research, 2003, 39, .	4.2	132
22	Lessons Learned from 25 Years of Research at the MADE Site. Ground Water, 2011, 49, 649-662.	1.3	128
23	When enough is enough: The worth of monitoring data in aquifer remediation design. Water Resources Research, 1994, 30, 3499-3513.	4.2	122
24	Riparian hydroecology: A coupled model of the observed interactions between groundwater flow and meadow vegetation patterning. Water Resources Research, 2007, 43, .	4.2	112
25	Spatial connectivity in a highly heterogeneous aquifer: From cores to preferential flow paths. Water Resources Research, 2011, 47, .	4.2	111
26	Mapping Hydraulic Conductivity: Sequential Conditioning with Measurements of Solute Arrival Time, Hydraulic Head, and Local Conductivity. Water Resources Research, 1995, 31, 1615-1626.	4.2	106
27	A Statistical Methodology for Estimating Transport Parameters: Theory and Applications to Oneâ€Dimensional Advectivecâ€Dispersive Systems. Water Resources Research, 1986, 22, 1303-1315.	4.2	105
28	Estimating Lithologic and Transport Properties in Three Dimensions Using Seismic and Tracer Data: The Kesterson aquifer. Water Resources Research, 1996, 32, 2659-2670.	4.2	104
29	Analysis of uncertainty in optimal groundwater contaminant capture design. Water Resources Research, 1993, 29, 2139-2153.	4.2	103
30	Coupled seismic and tracer test inversion for aquifer property characterization. Water Resources Research, 1994, 30, 1965-1977.	4.2	101
31	Increasing drought in Jordan: Climate change and cascading Syrian land-use impacts on reducing transboundary flow. Science Advances, 2017, 3, e1700581.	10.3	93
32	Modeling Mass Transfer Processes in Soil Columns with Poreâ€Scale Heterogeneity. Soil Science Society of America Journal, 1998, 62, 62-74.	2.2	89
33	A local-scale, high-resolution evapotranspiration mapping algorithm (ETMA) with hydroecological applications at riparian meadow restoration sites. Remote Sensing of Environment, 2005, 98, 182-200.	11.0	85
34	Hydraulic gradient control for groundwater contaminant removal. Journal of Hydrology, 1985, 76, 85-106.	5.4	83
35	Impact of the Syrian refugee crisis on land use and transboundary freshwater resources. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 14932-14937.	7.1	82
36	Salt marsh ecohydrological zonation due to heterogeneous vegetationâ€“groundwaterâ€“surface water interactions. Water Resources Research, 2012, 48, .	4.2	81

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37	Aquifer remediation: A method for estimating mass transfer rate coefficients and an evaluation of pulsed pumping. Water Resources Research, 1994, 30, 1979-1991.	4.2	79
38	Sustainable conjunctive water management in irrigated agriculture: Model formulation and application to the Yaqui Valley, Mexico. Water Resources Research, 2006, 42, .	4.2	77
39	Timeâ€lapse inversion of crosswell radar data. Geophysics, 2002, 67, 1740-1752.	2.6	75
40	Optimal dynamic management of groundwater pollutant sources. Water Resources Research, 1982, 18, 71-76.	4.2	73
41	Identifying discrete geologic structures that produce anomalous hydraulic response: An inverse modeling approach. Water Resources Research, 2008, 44, .	4.2	73
42	Effects of spatially variable resolution on field-scale estimates of tracer concentration from electrical inversions using Archieâ€™s law. Geophysics, 2006, 71, G83-G91.	2.6	69
43	The Local Geometry of Gas Injection into Saturated Homogeneous Porous Media. Transport in Porous Media, 2007, 68, 107-127.	2.6	69
44	Relationship of Salt Marsh Vegetation Zonation to Spatial Patterns in Soil Moisture, Salinity, and Topography. Ecosystems, 2010, 13, 1287-1302.	3.4	69
45	Convergence of Stochastic Optimization and Decision Analysis in the Engineering Design of Aquifer Remediation. Ground Water, 1999, 37, 934-954.	1.3	67
46	Salt marshâ€“atmosphere exchange of energy, water vapor, and carbon dioxide: Effects of tidal flooding and biophysical controls. Water Resources Research, 2010, 46, .	4.2	67
47	Identifying fracture-zone geometry using simulated annealing and hydraulic-connection data. Water Resources Research, 2000, 36, 1707-1721.	4.2	66
48	Limits of applicability of the advection-dispersion model in aquifers containing connected high-conductivity channels. Water Resources Research, 2004, 40, .	4.2	65
49	Design and Cost Analysis of Rapid Aquifer Restoration Systems Using Flow Simulation and Quadratic Programming. Ground Water, 1986, 24, 777-790.	1.3	63
50	Combined interpretation of radar, hydraulic, and tracer data from a fractured-rock aquifer near Mirror Lake, New Hampshire, USA. Hydrogeology Journal, 2006, 14, 1-14.	2.1	63
51	Framework to evaluate the worth of hydraulic conductivity data for optimal groundwater resources management in ecologically sensitive areas. Water Resources Research, 2005, 41, .	4.2	61
52	A coupled humanâ€“natural system analysis of freshwater security under climate and population change. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	61
53	Inferring the relation between seismic slowness and hydraulic conductivity in heterogeneous aquifers. Water Resources Research, 2000, 36, 2121-2132.	4.2	60
54	Large scale nonlinear deterministic and stochastic optimization: Formulations involving simulation of subsurface contamination. Mathematical Programming, 1990, 48, 19-39.	2.4	59

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55	A Policy Evaluation Tool: Management of a Multiaquifer System Using Controlled Stream Recharge. Water Resources Research, 1985, 21, 1731-1747.	4.2	57
56	Simulating physical processes and economic behavior in saline, irrigated agriculture: model development. Water Resources Research, 1990, 26, 1359-1369.	4.2	57
57	Effects of air injection on flow through porous media: Observations and analyses of laboratory-scale processes. Water Resources Research, 2004, 40, .	4.2	56
58	Design of multiple contaminant remediation: Sensitivity to rate-limited mass transfer. Water Resources Research, 1994, 30, 435-446.	4.2	55
59	A model for managing sources of groundwater pollution. Water Resources Research, 1982, 18, 773-781.	4.2	54
60	Sustainable urban water supply in south India: Desalination, efficiency improvement, or rainwater harvesting?. Water Resources Research, 2010, 46, .	4.2	54
61	Distinguishing wetland vegetation and channel features with object-based image segmentation. International Journal of Remote Sensing, 2013, 34, 1332-1354.	2.9	52
62	A remote sensing method for estimating regional reservoir area and evaporative loss. Journal of Hydrology, 2017, 555, 213-227.	5.4	52
63	Evaluation of the applicability of the dualâ€domain mass transfer model in porous media containing connected highâ€conductivity channels. Water Resources Research, 2007, 43, .	4.2	50
64	Design of Optimal, Reliable Plume Capture Schemes: Application to the Gloucester Landfill Ground-Water Contamination Problem. Ground Water, 1993, 31, 107-114.	1.3	49
65	Hydrogeophysical tracking of three-dimensional tracer migration: The concept and application of apparent petrophysical relations. Water Resources Research, 2006, 42, .	4.2	48
66	Effective permeability of porous media containing branching channel networks. Physical Review E, 2006, 73, 026305.	2.1	48
67	Assessment of humanâ€“natural system characteristics influencing global freshwater supply vulnerability. Environmental Research Letters, 2015, 10, 104014.	5.2	46
68	Reliable groundwater management in hydroecologically sensitive areas. Water Resources Research, 2004, 40, .	4.2	45
69	Processes Controlling the Thermal Regime of Saltmarsh Channel Beds. Environmental Science & Technology, 2008, 42, 671-676.	10.0	45
70	Tsunami-induced groundwater salinization in southeastern India. Comptes Rendus - Geoscience, 2009, 341, 339-346.	1.2	44
71	Global analysis of urban surface water supply vulnerability. Environmental Research Letters, 2014, 9, 104004.	5.2	44
72	How <scp>J</scp>ordan and <scp>S</scp>audi <scp>A</scp>rabia are avoiding a tragedy of the commons over shared groundwater. Water Resources Research, 2017, 53, 5451-5468.	4.2	43

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73	The concept of in-situ vapor stripping for removing VOCs from groundwater. Transport in Porous Media, 1992, 8, 71-92.	2.6	41
74	A general approach to advectiveâ€“dispersive transport with multirate mass transfer. Advances in Water Resources, 2005, 28, 33-42.	3.8	41
75	A hydrologicâ€economic modeling approach for analysis of urban water supply dynamics in Chennai, India. Water Resources Research, 2010, 46, .	4.2	40
76	Investigation of Small-Scale Preferential Flow with a Forced-Gradient Tracer Test. Ground Water, 2011, 49, 503-514.	1.3	40
77	Closing the irrigation deficit in Cambodia: Implications for transboundary impacts on groundwater and Mekong River flow. Journal of Hydrology, 2016, 535, 85-92.	5.4	40
78	Geological modeling of submeter scale heterogeneity and its influence on tracer transport in a fluvial aquifer. Water Resources Research, 2010, 46, .	4.2	39
79	Management model of a groundwater system with a transient pollutant source. Water Resources Research, 1979, 15, 1243-1249.	4.2	38
80	Field Evaluation of In Situ Source Reduction of Trichloroethylene in Groundwater Using Bioenhanced In-Well Vapor Stripping. Environmental Science & Technology, 2005, 39, 8963-8970.	10.0	35
81	Controlling Arsenic Mobilization during Managed Aquifer Recharge: The Role of Sediment Heterogeneity. Environmental Science & Technology, 2020, 54, 8728-8738.	10.0	33
82	Peak Oil Demand: The Role of Fuel Efficiency and Alternative Fuels in a Global Oil Production Decline. Environmental Science & Technology, 2013, 47, 8031-8041.	10.0	32
83	Coupled impacts of sea-level rise and tidal marsh restoration on endangered California clapper rail. Biological Conservation, 2014, 172, 89-100.	4.1	31
84	Comment on â€œInvestigating the Macrodispersion Experiment (MADE) site in Columbus, Mississippi, using a three-dimensional inverse flow and transport modelâ€• by Heidi Christiansen Barlebo, Mary C. Hill, and Dan Rosbjerg. Water Resources Research, 2006, 42, .	4.2	29
85	Optimal Location and Management of Waste Disposal Facilities Affecting Ground Water Quality. Journal of the American Water Resources Association, 1982, 18, 43-51.	2.4	28
86	Benefits of an irrigation water rental market in a saline streamâ€aquifer system. Water Resources Research, 1990, 26, 1371-1381.	4.2	28
87	Full-scale demonstration of in situ cometabolic biodegradation of trichloroethylene in groundwater 2. Comprehensive analysis of field data using reactive transport modeling. Water Resources Research, 2002, 38, 11-1-11-18.	4.2	28
88	Relative importance of dispersion and rateâ€limited mass transfer in highly heterogeneous porous media: Analysis of a new tracer test at the Macrodispersion Experiment (MADE) site. Water Resources Research, 2010, 46, .	4.2	27
89	To prevent earthquake triggering, pressure changes due to CO ₂ injection need to be limited. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, E4510.	7.1	27
90	Quantifying mass transfer in permeable media containing conductive dendritic networks. Geophysical Research Letters, 2005, 32, n/a-n/a.	4.0	25

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91	Factors determining informal tanker water markets in Chennai, India. Water International, 2010, 35, 254-269.	1.0	25
92	Arsenic in the Multi-aquifer System of the Mekong Delta, Vietnam: Analysis of Large-Scale Spatial Trends and Controlling Factors. Environmental Science & Technology, 2014, 48, 6081-6088.	10.0	25
93	Particle travel times of contaminants incorporated into a planning model for groundwater plume capture. Journal of Hydrology, 1989, 107, 73-98.	5.4	23
94	Relating salt marsh pore water geochemistry patterns to vegetation zones and hydrologic influences. Water Resources Research, 2016, 52, 1729-1745.	4.2	23
95	Drying drives decline in muskrat population in the Peace-Athabasca Delta, Canada. Environmental Research Letters, 2018, 13, 124026.	5.2	22
96	Reliable conjunctive use rules for sustainable irrigated agriculture and reservoir spill control. Water Resources Research, 2006, 42, .	4.2	21
97	Distribution of small seasonal reservoirs in semi-arid regions and associated evaporative losses. Environmental Research Communications, 2020, 2, 061002.	2.3	21
98	Full-scale demonstration of in situ cometabolic biodegradation of trichloroethylene in groundwater 1. Dynamics of a recirculating well system. Water Resources Research, 2002, 38, 10-1-10-15.	4.2	19
99	Hydrological Controls on Methylmercury Distribution and Flux in a Tidal Marsh. Environmental Science & Technology, 2014, 48, 6795-6804.	10.0	18
100	Water-food-energy challenges in India: political economy of the sugar industry. Environmental Research Letters, 2020, 15, 084020.	5.2	18
101	MOD_FreeSurf2D: A MATLAB surface fluid flow model for rivers and streams. Computers and Geosciences, 2005, 31, 929-946.	4.2	17
102	Estimating monthly streamflow values by cokriging. Mathematical Geosciences, 1986, 18, 785-809.	0.9	16
103	Declining rainfall and regional variability changes in Jordan. Water Resources Research, 2015, 51, 3828-3835.	4.2	16
104	Alternative stable states of tidal marsh vegetation patterns and channel complexity. Ecohydrology, 2016, 9, 1639-1662.	2.4	15
105	Broad approaches to cholera control in Asia: Water, sanitation and handwashing. Vaccine, 2020, 38, A110-A117.	3.8	15
106	The Problem of Complex Eigensystems in the Semianalytical Solution For Advancement of Time in Solute Transport Simulations: A New Method Using Real Arithmetic. Water Resources Research, 1986, 22, 1149-1154.	4.2	14
107	A Physically Based Model for Air-Lift Pumping. Water Resources Research, 1996, 32, 2383-2399.	4.2	14
108	Laboratory-scale analysis of aquifer remediation by in-well vapor stripping 2. Modeling results. Journal of Contaminant Hydrology, 1997, 29, 41-58.	3.3	14

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109	A New Temperature-Vegetation Triangle Algorithm with Variable Edges (TAVE) for Satellite-Based Actual Evapotranspiration Estimation. Remote Sensing, 2016, 8, 735.	4.0	14
110	Incorporating uncertainty into aquifer management models. , 1997, , 101-112.		13
111	Extracting Impervious Surface from Aerial Imagery Using Semi-Automatic Sampling and Spectral Stability. Remote Sensing, 2020, 12, 506.	4.0	12
112	Insights from watershed simulations around the world: Watershed service-based restoration does not significantly enhance streamflow. Global Environmental Change, 2019, 58, 101938.	7.8	11
113	A method to calculate heterogeneous evapotranspiration using submeter thermal infrared imagery coupled to a stomatal resistance submodel. Water Resources Research, 2012, 48, .	4.2	10
114	Indigenous communities, groundwater opportunities. Science, 2018, 361, 453-455.	12.6	10
115	Drying landscape and interannual herbivoryâ€driven habitat degradation control semiaquatic mammal population dynamics. Ecohydrology, 2020, 13, e2169.	2.4	10
116	Reply to Juanes et al.: Evidence that earthquake triggering could render long-term carbon storage unsuccessful in many regions. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, .	7.1	9
117	Mapping Sugarcane in Central India with Smartphone Crowdsourcing. Remote Sensing, 2022, 14, 703.	4.0	9
118	Semi-analytical method for departure point determination. International Journal for Numerical Methods in Fluids, 2005, 47, 121-137.	1.6	8
119	Computer Models in Ground-Water Exploration. Ground Water, 1980, 18, 447-451.	1.3	7
120	Increasing nutrient inputs risk a surge of nitrous oxide emissions from global mangrove ecosystems. One Earth, 2021, 4, 742-748.	6.8	6
121	Capturing Stakeholdersâ€™ Challenges of the Foodâ€“Waterâ€“Energy Nexusâ€”A Participatory Approach for Pune and the Bhima Basin, India. Sustainability, 2022, 14, 5323.	3.2	6
122	Muskrats as a bellwether of a drying delta. Communications Biology, 2021, 4, 750.	4.4	5
123	GEOLOGIC INFERENCE FROM "FLOW NET" TRANSMISSIVITY DETERMINATION: THREE CASE STUDIES. Journal of the American Water Resources Association, 1985, 21, 919-930.	2.4	2
124	Reply [to â€œComment On â€˜Identifying Sources of Groundwater Pollution: An Optimization Approachâ€™ by Steven M. Gorelick, Barbara Evans, and Irwin Remsonâ€]. Water Resources Research, 1984, 20, 745-745.	4.2	0
125	Insights on expected streamflow response to land-cover restoration. Journal of Hydrology, 2020, 589, 125121.	5.4	0