Philippe Renard

List of Publications by Year
in descending order

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146 papers	5,671 citations	94433 37 h-index	85541 71 g-index
164 all docs	164 docs citations	164 times ranked	3718 citing authors

#	Article	IF	Citations
1	Calculating equivalent permeability: a review. Advances in Water Resources, 1997, 20, 253-278.	3.8	750
2	The Direct Sampling method to perform multipleâ€point geostatistical simulations. Water Resources Research, 2010, 46, .	4.2	425
3	Dealing with spatial heterogeneity. Hydrogeology Journal, 2005, 13, 161-183.	2.1	339
4	Connectivity metrics for subsurface flow and transport. Advances in Water Resources, 2013, 51, 168-196.	3.8	308
5	An Improved Parallel Multiple-point Algorithm Using a List Approach. Mathematical Geosciences, 2011, 43, 305-328.	2.4	180
6	Advances in understanding riverâ€groundwater interactions. Reviews of Geophysics, 2017, 55, 818-854.	23.0	158
7	Geological realism in hydrogeological and geophysical inverse modeling: A review. Advances in Water Resources, 2015, 86, 86-101.	3.8	152
8	CompreensÃ£o de grÃ¡ficos diagnÃ³stico para interpretaÃ§Ã£o de ensaios de caudal em furos. Hydrogeology Journal, 2009, 17, 589-600.	2.1	128
9	A practical guide to performing multiple-point statistical simulations with the Direct Sampling algorithm. Computers and Geosciences, 2013, 52, 307-324.	4.2	124
10	3D multiple-point statistics simulation using 2D training images. Computers and Geosciences, 2012, 40, 49-65.	4.2	117
11	Reconstruction of Incomplete Data Sets orÂImages Using Direct Sampling. Mathematical Geosciences, 2010, 42, 245-268.	2.4	109
12	Bayesian inverse problem and optimization with iterative spatial resampling. Water Resources Research, 2010, 46, .	4.2	100
13	Stochastic Hydrogeology: What Professionals Really Need?. Ground Water, 2007, 45, 531-541.	1.3	95
14	Three-dimensional high resolution fluvio-glacial aquifer analog â€“ Part 2: Geostatistical modeling. Journal of Hydrology, 2011, 405, 10-23.	5.4	94
15	Three-dimensional high resolution fluvio-glacial aquifer analog: Part 1: Field study. Journal of Hydrology, 2011, 405, 1-9.	5.4	94
16	Comparaison de trois mÃ©thodes gÃ©ostatistiques pour des simulations dâ€™hydrofaciÃ¨s: un test sur des sÃ©diments alluvionnaires. Hydrogeology Journal, 2012, 20, 299-311.	2.1	90
17	A numerical analysis of dimensionality and heterogeneity effects on advective dispersive seawater intrusion processes. Hydrogeology Journal, 2010, 18, 55-72.	2.1	88
18	Truncated Plurigaussian Simulations to Characterize Aquifer Heterogeneity. Ground Water, 2009, 47, 13-24.	1.3	80

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19	Probability Aggregation Methods in Geoscience. Mathematical Geosciences, 2012, 44, 545-581.	2.4	70
20	Issues in characterizing heterogeneity and connectivity in non-multiGaussian media. Advances in Water Resources, 2008, 31, 147-159.	3.8	68
21	A fast algorithm for the estimation of the equivalent hydraulic conductivity of heterogeneous media. Water Resources Research, 2000, 36, 3567-3580.	4.2	65
22	The problem of salt recycling and seawater intrusion in coastal irrigated plains: an example from the Kiti aquifer (Southern Cyprus). Journal of Hydrology, 2004, 288, 327-343.	5.4	64
23	A pseudo-genetic stochastic model to generate karstic networks. Journal of Hydrology, 2012, 414-415, 516-529.	5.4	58
24	Can one identify karst conduit networks geometry and properties from hydraulic and tracer test data?. Advances in Water Resources, 2016, 90, 99-115.	3.8	58
25	Groundwater resources in the Kouris catchment (Cyprus): data analysis and numerical modelling. Journal of Hydrology, 2003, 271, 130-149.	5.4	56
26	A dynamic model of the Aral Sea water and salt balance. Journal of Marine Systems, 2004, 47, 35-50.	2.1	56
27	Parallel Multiple-Point Statistics Algorithm Based on List and Tree Structures. Mathematical Geosciences, 2013, 45, 131-147.	2.4	55
28	Study of stable isotopes in the Kouris catchment (Cyprus) for the description of the regional groundwater flow. Journal of Hydrology, 2005, 308, 214-226.	5.4	54
29	Laboratory determination of the full permeability tensor. Journal of Geophysical Research, 2001, 106, 26443-26452.	3.3	52
30	Spatiotemporal reconstruction of gaps in multivariate fields using the direct sampling approach. Water Resources Research, 2012, 48, .	4.2	51
31	A workflow to facilitate three-dimensional geometrical modelling of complex poly-deformed geological units. Computers and Geosciences, 2009, 35, 644-658.	4.2	48
32	Blocking Moving Window algorithm: Conditioning multipleâ€point simulations to hydrogeological data. Water Resources Research, 2010, 46, .	4.2	48
33	Status of the Korba groundwater resources (Tunisia): observations and three-dimensional modelling of seawater intrusion. Hydrogeology Journal, 2010, 18, 1173-1190.	2.1	47
34	Simulation of rainfall time series from different climatic regions using the direct sampling technique. Hydrology and Earth System Sciences, 2014, 18, 3015-3031.	4.9	44
35	The future of hydraulic tests. Hydrogeology Journal, 2005, 13, 259-262.	2.1	43
36	Prediction-Focused Subsurface Modeling: Investigating the Need for Accuracy in Flow-Based Inverse Modeling. Mathematical Geosciences, 2015, 47, 173-191.	2.4	41

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37	Hydraulic testing of low-permeability formations. Engineering Geology, 2009, 107, 88-97.	6.3	40
38	Modeling Fineâ€Scale Geological Heterogeneityâ€”Examples of Sand Lenses in Tills. Ground Water, 2013, 51, 692-705.	1.3	38
39	Conditioning Facies Simulations with Connectivity Data. Mathematical Geosciences, 2011, 43, 879-903.	2.4	37
40	Statistical metrics for the characterization of karst network geometry and topology. Geomorphology, 2017, 283, 122-142.	2.6	36
41	Environmental Isotopes as Indicators for Ground Water Recharge to Fractured Granite. Ground Water, 2004, 42, 868-879.	1.3	33
42	Distance-based kriging relying on proxy simulations for inverse conditioning. Advances in Water Resources, 2013, 52, 275-291.	3.8	31
43	Simulation of braided river elevation model time series with multiple-point statistics. Geomorphology, 2014, 214, 148-156.	2.6	31
44	Reducing the impact of a desalination plant using stochastic modeling and optimization techniques. Journal of Hydrology, 2009, 365, 275-288.	5.4	30
45	A methodology for pseudo-genetic stochastic modeling of discrete fracture networks. Computers and Geosciences, 2013, 56, 12-22.	4.2	28
46	Geothermal state of the deep Western Alpine Molasse Basin, France-Switzerland. Geothermics, 2017, 67, 48-65.	3.4	27
47	Three-dimensional geometric modeling of a faulted domain: The Soultz Horst example (Alsace, France). Computers and Geosciences, 1994, 20, 1379-1390.	4.2	26
48	Integrating collocated auxiliary parameters in geostatistical simulations using joint probability distributions and probability aggregation. Water Resources Research, 2009, 45, .	4.2	24
49	Influence of conceptual model uncertainty on contaminant transport forecasting in braided river aquifers. Journal of Hydrology, 2015, 531, 124-141.	5.4	24
50	Impact of a stochastic sequential initiation of fractures on the spatial correlations and connectivity of discrete fracture networks. Journal of Geophysical Research: Solid Earth, 2016, 121, 5641-5658.	3.4	24
51	Application of tritium in precipitation and in groundwater of the Kouris catchment (Cyprus) for description of the regional groundwater flow. Applied Geochemistry, 2005, 20, 1292-1308.	3.0	22
52	Missing data simulation inside flow rate time-series using multiple-point statistics. Environmental Modelling and Software, 2016, 86, 264-276.	4.5	22
53	Conditioning multiple-point statistics simulations to block data. Spatial Statistics, 2016, 16, 53-71.	1.9	22
54	Constraining distance-based multipoint simulations to proportions and trends. Environmental Modelling and Software, 2015, 72, 184-197.	4.5	21

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55	On the use of multiple-point statistics to improve groundwater flow modeling in karst aquifers: A case study from the Hydrogeological Experimental Site of Poitiers, France. Journal of Hydrology, 2017, 545, 109-119.	5.4	21
56	Introducing wwhypda: a world-wide collaborative hydrogeological parameters database. Hydrogeology Journal, 2009, 17, 481-489.	2.1	19
57	Extrapolating the Fractal Characteristics of an Image Using Scale-Invariant Multiple-Point Statistics. Mathematical Geosciences, 2011, 43, 783-797.	2.4	19
58	Forecasting the Number of Soil Samples Required to Reduce Remediation Cost Uncertainty. Journal of Environmental Quality, 2004, 33, 1694-1702.	2.0	18
59	A roadmap for a dedicated Earth Science Grid platform. Earth Science Informatics, 2010, 3, 135-148.	3.2	18
60	Stochastic fracture generation accounting for the stratification orientation in a folded environment based on an implicit geological model. Engineering Geology, 2015, 187, 135-142.	6.3	18
61	Approximate discharge for constant head test with recharging boundary. Ground Water, 2005, 43, 439-442.	1.3	17
62	A geostatistical approach to the simulation of stacked channels. Marine and Petroleum Geology, 2017, 82, 318-335.	3.3	17
63	Grid-enabled Monte Carlo analysis of the impacts of uncertain discharge rates on seawater intrusion in the Korba aquifer (Tunisia). Hydrological Sciences Journal, 2010, 55, 1325-1336.	2.6	16
64	Stochastic forecasts of seawater intrusion towards sustainable groundwater management: application to the Korba aquifer (Tunisia). Hydrogeology Journal, 2013, 21, 425-440.	2.1	16
65	Generation of <scp>3D</scp> Spatially Variable Anisotropy for Groundwater Flow Simulations. Ground Water, 2015, 53, 955-958.	1.3	16
66	A model ensemble generator to explore structural uncertainty in karst systems with unmapped conduits. Hydrogeology Journal, 2021, 29, 229-248.	2.1	16
67	Multiple-point statistics using multi-resolution images. Stochastic Environmental Research and Risk Assessment, 2020, 34, 251-273.	4.0	16
68	Grid Computing for Earth Science. Eos, 2009, 90, 117-119.	0.1	15
69	Stochastic simulation of channelized sedimentary bodies using a constrained L-system. Computers and Geosciences, 2017, 105, 158-168.	4.2	15
70	Random partitioning and adaptive filters for multiple-point stochastic simulation. Stochastic Environmental Research and Risk Assessment, 2018, 32, 1375-1396.	4.0	15
71	Contaminant source localization via Bayesian global optimization. Hydrology and Earth System Sciences, 2019, 23, 351-369.	4.9	15
72	A method for the stochastic modeling of karstic systems accounting for geophysical data: an example of application in the region of Tulum, Yucatan Peninsula (Mexico). Hydrogeology Journal, 2013, 21, 529-544.	2.1	14

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73	Binary upscaling on complex heterogeneities: The role of geometry and connectivity. Advances in Water Resources, 2014, 64, 47-61.	3.8	14
74	Posterior population expansion for solving inverse problems. Water Resources Research, 2017, 53, 2902-2916.	4.2	14
75	Simulating Smallâ€Scale Rainfall Fields Conditioned by Weather State and Elevation: A Dataâ€Driven Approach Based on Rainfall Radar Images. Water Resources Research, 2017, 53, 8512-8532.	4.2	14
76	Multiple-point statistical simulation of the ore boundaries for a lateritic bauxite deposit. Stochastic Environmental Research and Risk Assessment, 2019, 33, 865-878.	4.0	14
77	A pseudo genetic model of coarse braidedâ€river deposits. Water Resources Research, 2015, 51, 9595-9611.	4.2	13
78	A survey of groundwater quality in Tulum region, Yucatan Peninsula, Mexico. Environmental Earth Sciences, 2018, 77, 1.	2.7	13
79	3D Geological Image Synthesis From 2D Examples Using Generative Adversarial Networks. Frontiers in Water, 2020, 2, .	2.3	13
80	Using Generative Adversarial Networks as a Fast Forward Operator for Hydrogeological Inverse Problems. Ground Water, 2020, 58, 938-950.	1.3	13
81	Assessing the effect of different river water level interpolation schemes on modeled groundwater residence times. Journal of Hydrology, 2014, 510, 393-402.	5.4	12
82	Hydraulic subsurface measurements and hydrodynamic modelling as indicators for groundwater flow systems in the Rotondo granite, Central Alps (Switzerland). Hydrological Processes, 2014, 28, 255-278.	2.6	12
83	Automatic Parameter Tuning of Multiple-Point Statistical Simulations for Lateritic Bauxite Deposits. Minerals (Basel, Switzerland), 2018, 8, 220.	2.0	11
84	A Framework for the Crossâ€Validation of Categorical Geostatistical Simulations. Earth and Space Science, 2020, 7, e2020EA001152.	2.6	11
85	Coupling SKS and SWMM to Solve the Inverse Problem Based on Artificial Tracer Tests in Karstic Aquifers. Water (Switzerland), 2020, 12, 1139.	2.7	11
86	Integrating aerial geophysical data in multiple-point statistics simulations to assist groundwater flow models. Hydrogeology Journal, 2015, 23, 883-900.	2.1	10
87	Simulating rainfall time-series: how to account for statistical variability at multiple scales?. Stochastic Environmental Research and Risk Assessment, 2018, 32, 321-340.	4.0	10
88	The Traveling Pilot Point method. A novel approach to parameterize the inverse problem for categorical fields. Advances in Water Resources, 2020, 138, 103556.	3.8	10
89	Comparing connected structures in ensemble of random fields. Advances in Water Resources, 2016, 96, 145-169.	3.8	9
90	Pilot Point Optimization of Mining Boundaries for Lateritic Metal Deposits: Finding the Trade-off Between Dilution and Ore Loss. Natural Resources Research, 2019, 28, 153-171.	4.7	9

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91	Special Issue on 20ÂYears of Multiple-Point Statistics: Part 1. Mathematical Geosciences, 2014, 46, 129-131.	2.4	8
92	Analog-based meandering channel simulation. Water Resources Research, 2014, 50, 836-854.	4.2	8
93	Parallelized Adaptive Importance Sampling for Solving Inverse Problems. Frontiers in Earth Science, 2018, 6, .	1.8	8
94	Fast and Interactive Editing Tools for Spatial Models. Mathematical Geosciences, 2019, 51, 109-125.	2.4	8
95	Oil production uncertainty assessment by predicting reservoir production curves and confidence intervals from arbitrary proxy responses. Journal of Petroleum Science and Engineering, 2019, 176, 116-125.	4.2	8
96	Impact of phases distribution on mixing and reactions in unsaturated porous media. Advances in Water Resources, 2020, 144, 103697.	3.8	8
97	3D multiple-point statistics simulations of the Roussillon Continental Pliocene aquifer using DeeSse. Hydrology and Earth System Sciences, 2020, 24, 4997-5013.	4.9	8
98	Fractal Dimension, Walk Dimension and Conductivity Exponent of Karst Networks around Tulum. Frontiers in Physics, 2016, 4, .	2.1	7
99	A new perspective to model subsurface stratigraphy in alluvial hydrogeological basins, introducing geological hierarchy and relative chronology. Computers and Geosciences, 2020, 140, 104506.	4.2	7
100	Direct simulation of non-additive properties on unstructured grids. Advances in Water Resources, 2020, 143, 103665.	3.8	7
101	Conditioning Multipleâ€Point Statistics Simulation to Inequality Data. Earth and Space Science, 2021, 8, e2020EA001515.	2.6	7
102	Can shallow open-loop hydrothermal well-doublets help remediate seawater intrusion?. Hydrogeology Journal, 2015, 23, 619-629.	2.1	6
103	A 2D hyperspectral library of mineral reflectance, from 900 to 2500 nm. Scientific Data, 2019, 6, 268.	5.3	6
104	Multiresolution Approach to Condition Categorical Multipleâ€Point Realizations to Dynamic Data With Iterative Ensemble Smoothing. Water Resources Research, 2020, 56, e2019WR025875.	4.2	6
105	Quasiâ€Online Groundwater Model Optimization Under Constraints of Geological Consistency Based on Iterative Importance Sampling. Water Resources Research, 2020, 56, e2019WR026777.	4.2	6
106	Analysis and stochastic simulation of geometrical properties of conduits in karstic networks. Geomorphology, 2021, 377, 107480.	2.6	6
107	Hytool: an open source matlab toolbox for the interpretation of hydraulic tests using analytical solutions. Journal of Open Source Software, 2017, 2, 441.	4.6	6
108	Subnetworks of Percolation Backbones to Model Karst Systems Around Tulum, Mexico. Frontiers in Physics, 2016, 4, .	2.1	5

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109	tTEM20AAR: a benchmark geophysical data set for unconsolidated fluvioglacial sediments. Earth System Science Data, 2021, 13, 2743-2752.	9.9	5
110	How to Model Realistic 3D Karst Reservoirs Using a Pseudo-Genetic Methodology â€“ Example of Two Case Studies. Environmental Earth Sciences, 2010, , 251-255.	0.2	5
111	Ice volume and basal topography estimation using geostatistical methods and ground-penetrating radar measurements: application to the Tsanfleuron and Scex Rouge glaciers, Swiss Alps. Cryosphere, 2021, 15, 5169-5186.	3.9	5
112	Automated Hierarchical 3D Modeling of Quaternary Aquifers: The ArchPy Approach. Frontiers in Earth Science, 2022, 10, .	1.8	5
113	ModÃ©lisation du bilan hydrologique de la partie sud de la Mer d'Aral entre 1993 et 2001 / Hydrological balance modelling of the southern Aral Sea between 1993 and 2001. Hydrological Sciences Journal, 2005, 50, .	2.6	4
114	Editorsâ€™ Message: the Hydrogeologist Time Capsule â€” archival video recordings of influential hydrogeologists. Hydrogeology Journal, 2008, 16, 1-3.	2.1	4
115	New Methods to Estimate 2D Water Level Distributions of Dynamic Rivers. Ground Water, 2013, 51, 847-854.	1.3	4
116	Special Issue on 20 Years of Multiple-Point Statistics: Part 2. Mathematical Geosciences, 2014, 46, 517-518.	2.4	4
117	Conditioning Multi-Gaussian Groundwater Flow Parameters to Transient Hydraulic Head and Flowrate Data With Iterative Ensemble Smoothers: A Synthetic Case Study. Frontiers in Earth Science, 2020, 8, .	1.8	4
118	The stochastic simulation of karst conduit network structure using anisotropic fast marching, and its application to a geologically complex alpine karst system. Hydrogeology Journal, 2022, 30, 927-946.	2.1	4
119	EuroKarst 2016, NeuchÃ¢tel. Advances in Karst Science, 2017, , .	0.3	3
120	An Attempt to Boost Posterior Population Expansion Using Fast Machine Learning Algorithms. Frontiers in Artificial Intelligence, 2021, 4, 624629.	3.4	3
121	Can electrical conductivity data from a single pumping test provide information about the location of a neighboring mixing zone between two aquifers? An example from Aix-les-Bains/Marlioz (Savoie,) Tj ETQq1 1 0.784314 rgBT /Over		
122	Robust input layer for neural networks for hyperspectral classification of data with missing bands. Applied Computing and Geosciences, 2020, 8, 100034.	2.2	1
123	Efficiency of template matching methods for Multiple-Point Statistics simulations. Applied Computing and Geosciences, 2021, 11, 100064.	2.2	1
124	Channel Simulation Using L-system, Potential Fields and NURBS. , 2015, , .		1
125	K-fold Cross-validation of Multiple-point Statistical Simulations. , 2019, , .		1
126	Hybrid Geostatistics: Object-based Simulations Using MPS-generated Meandering Channels. , 2014, , .		1

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127	Equivalent Permeability Tensor of Heterogeneous Media: Upscaling Methods and Criteria (Review and) Tj ETQq1 1 0.784314 rgBT /Ov	2.2	1
128	Groundwater resources in the Kouris catchment (Cyprus): data analysis and numerical modelling. Journal of Hydrology, 2002, 271, 130-130.	5.4	0
129	Automatic Reservoir Modelling: A Sate of the Art. , 2019, , .		0
130	MP Simulations Without Computing MP Statistics. , 2010, , .		0
131	Hybrid Discrete Fracture Network Simulation Driven by Statistics, Tectonic History and Geomechanics. , 2013, , .		0
132	Handling Soft Probabilities in Multiple Point Statistics Simulation. Lecture Notes in Earth System Sciences, 2014, , 69-72.	0.6	0
133	Geophysics for the Determination of Hydrological Parameters of Karst Systems in Yucatan, Mexico. , 2014, , .		0
134	Proxy Comparison for Sorting Models and Assessing Uncertainty on Oil Recovery Profiles. , 2014, , .		0
135	A New Generic Method for Fast and Interactive Geological Models Perturbation. , 2014, , .		0
136	Multiple-point Statistics Simulations Accounting for Block Data. , 2015, , .		0
137	Quality Analysis of Geostatistical Simulations through their Connected Structures. , 2015, , .		0
138	A Workflow for Correlated Discrete Fracture Network Simulation Constrained by Microseismic Data. , 2016, , .		0
139	Above and Below: Understanding River-Groundwater Exchanges. Eos, 2018, 99, .	0.1	0
140	Simplified Direct Sampling Method for Geostatistical Multiple-point Simulations. , 2019, , .		0
141	Multiple Point Statistics with Pyramids Application on the Multi-scale Multi-structure Training Images. , 2019, , .		0
142	Direct Geostatistical Simulation on Unstructured Grids II: A Proposal for Non-additive Variables. , 2019, , .		0
143	Multiple-point Statistics Based on Gaussian Pyramids of the Training Image. , 2019, , .		0
144	The Posterior Population Expansion Ensemble Method to Invert Categorical Fields. , 2019, , .		0

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145	3D Multiple-points Statistics Simulations of the Roussillon Continental Pliocene Reservoir Using DeeSse. , 2019, , .		0
146	GROUNDWATER MODELING IN ALPINE KARST SYSTEMS: A MODEL ENSEMBLE GENERATOR TO EXPLORE STRUCTURAL UNCERTAINTY. , 2020, , .		0