Philipp Blum

List of Publications by Year
in descending order

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130 papers	6,648 citations	70961 41 h-index	76769 74 g-index
167 all docs	167 docs citations	167 times ranked	4593 citing authors

#	Article	IF	Citations
1	Greenhouse gas emission savings of ground source heat pump systems in Europe: A review. Renewable and Sustainable Energy Reviews, 2012, 16, 1256-1267.	8.2	297
2	A moving finite line source model to simulate borehole heat exchangers with groundwater advection. International Journal of Thermal Sciences, 2011, 50, 2506-2513.	2.6	252
3	Fatal landslides in Europe. Landslides, 2016, 13, 1545-1554.	2.7	238
4	International legal status of the use of shallow geothermal energy. Renewable and Sustainable Energy Reviews, 2010, 14, 2611-2625.	8.2	231
5	Sustainability and policy for the thermal use of shallow geothermal energy. Energy Policy, 2013, 59, 914-925.	4.2	201
6	Is it only CO2 that matters? A life cycle perspective on shallow geothermal systems. Renewable and Sustainable Energy Reviews, 2010, 14, 1798-1813.	8.2	191
7	Worldwide application of aquifer thermal energy storage â€“ A review. Renewable and Sustainable Energy Reviews, 2018, 94, 861-876.	8.2	185
8	CO2 savings of ground source heat pump systems â€“ A regional analysis. Renewable Energy, 2010, 35, 122-127.	4.3	180
9	Subsurface urban heat islands in German cities. Science of the Total Environment, 2013, 442, 123-133.	3.9	168
10	Review on life cycle environmental effects of geothermal power generation. Renewable and Sustainable Energy Reviews, 2013, 26, 446-463.	8.2	165
11	Techno-economic and spatial analysis of vertical ground source heat pump systems in Germany. Energy, 2011, 36, 3002-3011.	4.5	140
12	Evaluating the influence of thermal dispersion on temperature plumes from geothermal systems using analytical solutions. International Journal of Thermal Sciences, 2011, 50, 1223-1231.	2.6	138
13	Time Synchronization and Calibration in Wireless Sensor Networks. , 2005, , 199-237.		133
14	A review of ground investigations for ground source heat pump (GSHP) systems. Energy and Buildings, 2016, 117, 160-175.	3.1	130
15	Numerical sensitivity study of thermal response tests. Renewable Energy, 2012, 41, 245-253.	4.3	128
16	The geothermal potential of urban heat islands. Environmental Research Letters, 2010, 5, 044002.	2.2	125
17	Evaluating MT3DMS for Heat Transport Simulation of Closed Geothermal Systems. Ground Water, 2010, 48, 741-756.	0.7	120
18	The geothermal potential of cities. Renewable and Sustainable Energy Reviews, 2019, 106, 17-30.	8.2	118

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19	Long-Term Evolution of Anthropogenic Heat Fluxes into a Subsurface Urban Heat Island. Environmental Science & Technology, 2013, 47, 9747-9755.	4.6	114
20	Observed groundwater temperature response to recent climate change. Hydrology and Earth System Sciences, 2014, 18, 4453-4466.	1.9	109
21	Analytical approach to groundwater-influenced thermal response tests of grouted borehole heat exchangers. Geothermics, 2013, 46, 22-31.	1.5	100
22	Importance of heterocylic aromatic compounds in monitored natural attenuation for coal tar contaminated aquifers: A review. Journal of Contaminant Hydrology, 2011, 126, 181-194.	1.6	82
23	Evaluation of sampling methods for fracture network characterization using outcrops. AAPG Bulletin, 2013, 97, 1545-1566.	0.7	74
24	Analytical simulation of groundwater flow and land surface effects on thermal plumes of borehole heat exchangers. Applied Energy, 2015, 146, 421-433.	5.1	73
25	Increased ground temperatures in urban areas: Estimation of theÂtechnical geothermal potential. Renewable Energy, 2017, 103, 388-400.	4.3	70
26	Spatial resolution of anthropogenic heat fluxes into urban aquifers. Science of the Total Environment, 2015, 524-525, 427-439.	3.9	69
27	Global patterns of shallow groundwater temperatures. Environmental Research Letters, 2017, 12, 034005.	2.2	69
28	Optimization of energy extraction for closed shallow geothermal systems using linear programming. Geothermics, 2012, 43, 57-65.	1.5	68
29	Mobilisation or dilution? Nitrate response of karst springs to high rainfall events. Hydrology and Earth System Sciences, 2014, 18, 4423-4435.	1.9	60
30	A finite line source model with Cauchy-type top boundary conditions for simulating near surface effects on borehole heat exchangers. Energy, 2016, 98, 50-63.	4.5	58
31	Flow-through experiments on waterâ€“rock interactions in a sandstone caused by CO2 injection at pressures and temperatures mimicking reservoir conditions. Applied Geochemistry, 2015, 58, 136-146.	1.4	55
32	Carbon and oxygen isotope indications for CO2 behaviour after injection: First results from the Ketzin site (Germany). International Journal of Greenhouse Gas Control, 2010, 4, 1000-1006.	2.3	53
33	Spatial characterization of the hydraulic conductivity using directâ€push injection logging. Water Resources Research, 2010, 46, .	1.7	52
34	Thermo-economic analysis of four different types of ground heat exchangers in energy piles. Applied Thermal Engineering, 2016, 108, 11-19.	3.0	52
35	Propagation of Seasonal Temperature Signals into an Aquifer upon Bank Infiltration. Ground Water, 2011, 49, 491-502.	0.7	47
36	Three-dimensional landslide evolution model at the Yangtze River. Engineering Geology, 2021, 292, 106275.	2.9	46

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37	Groundwater temperature evolution in the subsurface urban heat island of Cologne, Germany. Hydrological Processes, 2015, 29, 965-978.	1.1	45
38	Advanced thermal response tests: A review. Renewable and Sustainable Energy Reviews, 2020, 119, 109575.	8.2	44
39	Quantification of biodegradation for o-xylene and naphthalene using first order decay models, Michaelisâ€“Menten kinetics and stable carbon isotopes. Journal of Contaminant Hydrology, 2009, 105, 118-130.	1.6	43
40	The Jabal Akhdar dome in the Oman Mountains: Evolution of a dynamic fracture system. Numerische Mathematik, 2014, 314, 1104-1139.	0.7	43
41	A matter of meters: state of the art in the life cycle assessment of enhanced geothermal systems. Energy and Environmental Science, 2016, 9, 2720-2743.	15.6	43
42	Numerical Simulations and Validation of Contact Mechanics in a Granodiorite Fracture. Rock Mechanics and Rock Engineering, 2018, 51, 2805-2824.	2.6	43
43	Uncertainty assessment in 3-D geological models of increasing complexity. Solid Earth, 2017, 8, 515-530.	1.2	42
44	Improved interval-based clock synchronization in sensor networks. , 2004, , .		41
45	Evaluation of the representative elementary volume (REV) of a fractured geothermal sandstone reservoir. Environmental Earth Sciences, 2010, 61, 1713-1724.	1.3	41
46	Linking Surface Urban Heat Islands with Groundwater Temperatures. Environmental Science & Technology, 2016, 50, 70-78.	4.6	41
47	Techno-economic and environmental analysis of an Aquifer Thermal Energy Storage (ATES) in Germany. Geothermal Energy, 2019, 7, .	0.9	40
48	Impact of agronomic practices of an intensive dairy farm on nitrogen concentrations in a karst aquifer in Ireland. Agriculture, Ecosystems and Environment, 2013, 179, 187-199.	2.5	39
49	Extracting past atmospheric warming and urban heating effects from borehole temperature profiles. Geothermics, 2016, 64, 289-299.	1.5	39
50	Swelling of Clay-Sulfate Rocks: A Review of Processes and Controls. Rock Mechanics and Rock Engineering, 2016, 49, 1533-1549.	2.6	39
51	Phaseâ€field modeling of epitaxial growth of polycrystalline quartz veins in hydrothermal experiments. Geofluids, 2016, 16, 211-230.	0.3	38
52	Integrated assessment of agricultural nutrient pressures and legacies in karst landscapes. Agriculture, Ecosystems and Environment, 2017, 239, 246-256.	2.5	38
53	Internal synchronization of drift-constraint clocks in ad-hoc sensor networks. , 2004, , .		37
54	Ground energy balance for borehole heat exchangers: Vertical fluxes, groundwater and storage. Renewable Energy, 2015, 83, 1341-1351.	4.3	37

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55	Performance assessment of a nuclear waste repository: Upscaling coupled hydro-mechanical properties for far-field transport analysis. International Journal of Rock Mechanics and Minings Sciences, 2005, 42, 781-792.	2.6	36
56	Stochastic simulations of regional scale advective transport in fractured rock masses using block upscaled hydro-mechanical rock property data. Journal of Hydrology, 2009, 369, 318-325.	2.3	36
57	Fracture network evaluation program (FraNEP): A software for analyzing 2D fracture trace-line maps. Computers and Geosciences, 2013, 60, 11-22.	2.0	36
58	Technical Note: Field experiences using UV/VIS sensors for high-resolution monitoring of nitrate in groundwater. Hydrology and Earth System Sciences, 2015, 19, 1589-1598.	1.9	36
59	Damage event analysis of vertical ground source heat pump systems in Germany. Geothermal Energy, 2017, 5, .	0.9	36
60	Thermal tracer testing in a sedimentary aquifer: field experiment (Lauswiesen, Germany) and numerical simulation. Hydrogeology Journal, 2014, 22, 175-187.	0.9	35
61	Hydraulic characterization of aquifers by thermal response testing: Validation by large-scale tank and field experiments. Water Resources Research, 2014, 50, 71-85.	1.7	35
62	Analytical solutions for predicting thermal plumes of groundwater heat pump systems. Renewable Energy, 2020, 147, 2696-2707.	4.3	33
63	Performance analysis of Aquifer Thermal Energy Storage (ATES). Renewable Energy, 2020, 146, 1536-1548.	4.3	33
64	Error in hydraulic head and gradient time-series measurements: a quantitative appraisal. Hydrology and Earth System Sciences, 2019, 23, 3603-3629.	1.9	31
65	Groundwater temperature anomalies in central Europe. Environmental Research Letters, 2019, 14, 104012.	2.2	30
66	A novel concept for managing thermal interference between geothermal systems in cities. Renewable Energy, 2020, 145, 914-924.	4.3	29
67	Predicting Î´13CDIC dynamics in CCS: A scheme based on a review of inorganic carbon chemistry under elevated pressures and temperatures. International Journal of Greenhouse Gas Control, 2011, 5, 1250-1258.	2.3	28
68	The geothermal potential of urban heat islands. Environmental Research Letters, 2011, 6, 019501.	2.2	28
69	Identifying anthropogenic anomalies in air, surface and groundwater temperatures in Germany. Science of the Total Environment, 2017, 584-585, 145-153.	3.9	28
70	Risk analysis of High-Temperature Aquifer Thermal Energy Storage (HT-ATES). Renewable and Sustainable Energy Reviews, 2020, 133, 110153.	8.2	28
71	Fracture flow due to hydrothermally induced quartz growth. Advances in Water Resources, 2017, 107, 93-107.	1.7	27
72	Field scale characterization and modeling of contaminant release from a coal tar source zone. Journal of Contaminant Hydrology, 2008, 102, 120-139.	1.6	26

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73	Chemical changes in fluid composition due to CO2 injection in the Altmark gas field: preliminary results from batch experiments. Environmental Earth Sciences, 2012, 67, 385-394.	1.3	26
74	Influence of spatially variable ground heat flux on closed-loop geothermal systems: Line source model with nonhomogeneous Cauchy-type top boundary conditions. Applied Energy, 2016, 180, 572-585.	5.1	26
75	Study on operation management of borehole heat exchangers for a large-scale hybrid ground source heat pump system in China. Energy, 2017, 123, 340-352.	4.5	26
76	Simulating stress-dependent fluid flow in a fractured core sample using real-time X-ray CT data. Solid Earth, 2016, 7, 1109-1124.	1.2	25
77	Is thermal use of groundwater a pollution?. Journal of Contaminant Hydrology, 2021, 239, 103791.	1.6	24
78	Modeling the longâ€term and transient evolution of biogeochemical and isotopic signatures in coal tarâ€“contaminated aquifers. Water Resources Research, 2011, 47, .	1.7	23
79	Comparing anthropogenic heat input and heat accumulation in the subsurface of Osaka, Japan. Science of the Total Environment, 2018, 643, 1127-1136.	3.9	23
80	Global detection of rainfall-triggered landslide clusters. Natural Hazards and Earth System Sciences, 2019, 19, 1433-1444.	1.5	23
81	Identifying key locations for shallow geothermal use in Vienna. Renewable Energy, 2021, 167, 1-19.	4.3	23
82	Small-scale diagenetic facies heterogeneity controls porosity and permeability pattern in reservoir sandstones. Environmental Earth Sciences, 2020, 79, 1.	1.3	22
83	Simulating landslide-induced tsunamis in the Yangtze River at the Three Gorges in China. Acta Geotechnica, 2021, 16, 2487-2503.	2.9	21
84	A general unified expression for solute and heat dispersion in homogeneous porous media. Water Resources Research, 2013, 49, 6166-6178.	1.7	20
85	Recent trends of groundwater temperatures in Austria. Hydrology and Earth System Sciences, 2018, 22, 3143-3154.	1.9	20
86	Meeting the demand: geothermal heat supply rates for an urban quarter in Germany. Geothermal Energy, 2019, 7, .	0.9	20
87	Estimation of Groundwater Temperatures in Paris, France. Geofluids, 2019, 2019, 1-11.	0.3	20
88	Impact of groundwater heat pump systems on subsurface temperature under variable advection, conduction and dispersion. Geothermics, 2020, 83, 101721.	1.5	20
89	Simulating permeability reduction by clay mineral nanopores in a tight sandstone by combining computer X-ray microtomography and focussed ion beam scanning electron microscopy imaging. Solid Earth, 2021, 12, 1-14.	1.2	20
90	Environmental impacts of aquifer thermal energy storage (ATES). Renewable and Sustainable Energy Reviews, 2021, 151, 111560.	8.2	18

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91	Dwarf: Delay-aWAre Robust Forwarding for Energy-Constrained Wireless Sensor Networks. Lecture Notes in Computer Science, 2007, , 64-81.	1.0	17
92	Modelo de flujo de fractura basado en imÃ¡genes satelitales de Wajid Sandstone, Saudi Arabia. Hydrogeology Journal, 2010, 18, 1699-1712.	0.9	16
93	Evolution of carbon isotope signatures during reactive transport of hydrocarbons in heterogeneous aquifers. Journal of Contaminant Hydrology, 2015, 174, 10-27.	1.6	16
94	Temperature measurements along a vertical borehole heat exchanger: A method comparison. Renewable Energy, 2019, 143, 1247-1258.	4.3	16
95	Stable carbon isotope techniques to quantify CO2 trapping under pre-equilibrium conditions and elevated pressures and temperatures. Chemical Geology, 2012, 320-321, 46-53.	1.4	15
96	Future-proofing hydrogeology by revising groundwater monitoring practice. Hydrogeology Journal, 2020, 28, 2963-2969.	0.9	14
97	Retrospective evaluation of landslide susceptibility maps and review of validation practice. Environmental Earth Sciences, 2021, 80, 1.	1.3	14
98	Technical note: Disentangling the groundwater response to Earth and atmospheric tides to improve subsurface characterisation. Hydrology and Earth System Sciences, 2020, 24, 6033-6046.	1.9	14
99	Determination of the thermal conductivity of sandstones from laboratory to field scale. Environmental Earth Sciences, 2016, 75, 1.	1.3	13
100	Novel instruments and methods to estimate depth-specific thermal properties in borehole heat exchangers. Geothermics, 2020, 86, 101813.	1.5	13
101	Measuring hydraulic fracture apertures: a comparison of methods. Solid Earth, 2020, 11, 2411-2423.	1.2	12
102	Swelling laws for clay-sulfate rocks revisited. Bulletin of Engineering Geology and the Environment, 2018, 77, 399-408.	1.6	11
103	Method Comparison to Determine Hydraulic Apertures of Natural Fractures. Rock Mechanics and Rock Engineering, 2020, 53, 1467-1476.	2.6	11
104	Preface: Hydrogeology of shallow thermal systems. Hydrogeology Journal, 2014, 22, 1-6.	0.9	8
105	Reactive Transport Modeling of Swelling Processes in Clayâ€sulfate Rocks. Water Resources Research, 2018, 54, 6543-6565.	1.7	8
106	Analyzing the heave of an entire city: Modeling of swelling processes in clay-sulfate rocks. Engineering Geology, 2019, 261, 105259.	2.9	7
107	Groundwater fauna in an urban area â€“ natural or affected?. Hydrology and Earth System Sciences, 2021, 25, 3053-3070.	1.9	7
108	Novel Instrument for Temperature Measurements in Borehole Heat Exchangers. IEEE Transactions on Instrumentation and Measurement, 2019, 68, 1062-1070.	2.4	6

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109	Mechanical and hydraulic properties of the excavation damaged zone (EDZ) in the Opalinus Clay of the Mont Terri rock laboratory, Switzerland. Solid Earth, 2021, 12, 1581-1600.	1.2	6
110	Optimization of the energy extraction of a shallow geothermal system. , 2010, , .		5
111	Uncertainty analysis of wireless temperature measurement (WTM) in borehole heat exchangers. Geothermics, 2021, 90, 102019.	1.5	5
112	Statistical analysis correlating changing agronomic practices with nitrate concentrations in a karst aquifer in Ireland. , 2014, , .		5
113	Development of a Methodology to Quantify the Importance of Hydro-Mechanical Processes in Radionuclide Migration Assessments. Elsevier Geo-Engineering Book Series, 2004, 2, 231-236.	0.0	4
114	Interval-based clock synchronization is resilient to mobility. , 0, , .		4
115	Integrated Research as Key to the Development of a Sustainable Geothermal Energy Technology. Energy Technology, 2017, 5, 965-1006.	1.8	4
116	Cooling supply costs of a university campus. Energy, 2022, 249, 123554.	4.5	4
117	Quantifying biodegradation rate constants of o-xylene by combining compound-specific isotope analysis and groundwater dating. Journal of Contaminant Hydrology, 2021, 238, 103757.	1.6	3
118	Modelling of wellbore cement alteration due to CO2-rich brine interaction in a large-scale autoclave experiment. International Journal of Greenhouse Gas Control, 2021, 110, 103428.	2.3	3
119	RHEA v1.0: Enabling fully coupled simulations with hydro-geomechanical heterogeneity. Geoscientific Model Development, 2021, 14, 6257-6272.	1.3	3
120	Upscaling calcite dissolution rates in a tight reservoir sandstone. Environmental Earth Sciences, 2022, 81, .	1.3	3
121	Partial source zone removal. Journal of Contaminant Hydrology, 2008, 102, 1-2.	1.6	2
122	OberflÃchennahe Geothermie: Regelungsbedarf zur BerÃ¼cksichtigung Ã¶kologischer and technischer Aspekte?. Grundwasser, 2011, 16, 67-68.	1.4	2
123	Fluid Flow Simulations of a Large-Scale Borehole Leakage Experiment. Transport in Porous Media, 2021, 136, 125-145.	1.2	2
124	Quantification of Fracture Roughness by Change Probabilities and Hurst Exponents. Mathematical Geosciences, 2022, 54, 679-710.	1.4	2
125	Understanding the Impact of Hydro-Mechanical Coupling on Performance Assessment of Deep Waste Disposal. Elsevier Geo-Engineering Book Series, 2004, 2, 237-242.	0.0	1
126	Flow through Experiment on CO2-brine-rock Interaction in a Sandstone from the Altmark Gas Reservoir. , 2015, , .		1

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127	Increased temperature in Urban ground as source of sustainable energy. International Journal of Energy Production and Management, 2016, 1, 263-271.	1.9	1
128	Increasing Fatal Landslides in Europe. , 2017, , 505-512.		1
129	Quantifying Installed Cooling Capacities Using Aerial Images. PFG - Journal of Photogrammetry, Remote Sensing and Geoinformation Science, 2021, 89, 49-56.	0.7	0
130	Who owns the German subsurface? Ownership and sustainable governance of the subsurface in Germany. Environment, Development and Sustainability, 2021, , 1-20.	2.7	0