

# Philipp Blum

## List of Publications by Year in descending order

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Version: 2024-02-01

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	Quantification of Fracture Roughness by Change Probabilities and Hurst Exponents. <i>Mathematical Geosciences</i> , 2022, 54, 679-710.	1.4	2
2	Cooling supply costs of a university campus. <i>Energy</i> , 2022, 249, 123554.	4.5	4
3	Upscaling calcite dissolution rates in a tight reservoir sandstone. <i>Environmental Earth Sciences</i> , 2022, 81, .	1.3	3
4	Uncertainty analysis of wireless temperature measurement (WTM) in borehole heat exchangers. <i>Geothermics</i> , 2021, 90, 102019.	1.5	5
5	Identifying key locations for shallow geothermal use in Vienna. <i>Renewable Energy</i> , 2021, 167, 1-19.	4.3	23
6	Fluid Flow Simulations of a Large-Scale Borehole Leakage Experiment. <i>Transport in Porous Media</i> , 2021, 136, 125-145.	1.2	2
7	Simulating landslide-induced tsunamis in the Yangtze River at the Three Gorges in China. <i>Acta Geotechnica</i> , 2021, 16, 2487-2503.	2.9	21
8	Quantifying Installed Cooling Capacities Using Aerial Images. <i>PFG - Journal of Photogrammetry, Remote Sensing and Geoinformation Science</i> , 2021, 89, 49-56.	0.7	0
9	Quantifying biodegradation rate constants of o-xylene by combining compound-specific isotope analysis and groundwater dating. <i>Journal of Contaminant Hydrology</i> , 2021, 238, 103757.	1.6	3
10	Is thermal use of groundwater a pollution?. <i>Journal of Contaminant Hydrology</i> , 2021, 239, 103791.	1.6	24
11	Groundwater fauna in an urban area – natural or affected?. <i>Hydrology and Earth System Sciences</i> , 2021, 25, 3053-3070.	1.9	7
12	Mechanical and hydraulic properties of the excavation damaged zone (EDZ) in the Opalinus Clay of the Mont Terri rock laboratory, Switzerland. <i>Solid Earth</i> , 2021, 12, 1581-1600.	1.2	6
13	Retrospective evaluation of landslide susceptibility maps and review of validation practice. <i>Environmental Earth Sciences</i> , 2021, 80, 1.	1.3	14
14	Who owns the German subsurface? Ownership and sustainable governance of the subsurface in Germany. <i>Environment, Development and Sustainability</i> , 2021, , 1-20.	2.7	0
15	Modelling of wellbore cement alteration due to CO <sub>2</sub> -rich brine interaction in a large-scale autoclave experiment. <i>International Journal of Greenhouse Gas Control</i> , 2021, 110, 103428.	2.3	3
16	Three-dimensional landslide evolution model at the Yangtze River. <i>Engineering Geology</i> , 2021, 292, 106275.	2.9	46
17	Environmental impacts of aquifer thermal energy storage (ATES). <i>Renewable and Sustainable Energy Reviews</i> , 2021, 151, 111560.	8.2	18
18	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. <i>Solid Earth</i> , 2021, 12, 1-14.	1.2	20

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19	RHEA v1.0: Enabling fully coupled simulations with hydro-geomechanical heterogeneity. <i>Geoscientific Model Development</i> , 2021, 14, 6257-6272.	1.3	3
20	A novel concept for managing thermal interference between geothermal systems in cities. <i>Renewable Energy</i> , 2020, 145, 914-924.	4.3	29
21	Analytical solutions for predicting thermal plumes of groundwater heat pump systems. <i>Renewable Energy</i> , 2020, 147, 2696-2707.	4.3	33
22	Method Comparison to Determine Hydraulic Apertures of Natural Fractures. <i>Rock Mechanics and Rock Engineering</i> , 2020, 53, 1467-1476.	2.6	11
23	Performance analysis of Aquifer Thermal Energy Storage (ATES). <i>Renewable Energy</i> , 2020, 146, 1536-1548.	4.3	33
24	Impact of groundwater heat pump systems on subsurface temperature under variable advection, conduction and dispersion. <i>Geothermics</i> , 2020, 83, 101721.	1.5	20
25	Advanced thermal response tests: A review. <i>Renewable and Sustainable Energy Reviews</i> , 2020, 119, 109575.	8.2	44
26	Risk analysis of High-Temperature Aquifer Thermal Energy Storage (HT-ATES). <i>Renewable and Sustainable Energy Reviews</i> , 2020, 133, 110153.	8.2	28
27	Future-proofing hydrogeology by revising groundwater monitoring practice. <i>Hydrogeology Journal</i> , 2020, 28, 2963-2969.	0.9	14
28	Small-scale diagenetic facies heterogeneity controls porosity and permeability pattern in reservoir sandstones. <i>Environmental Earth Sciences</i> , 2020, 79, 1.	1.3	22
29	Novel instruments and methods to estimate depth-specific thermal properties in borehole heat exchangers. <i>Geothermics</i> , 2020, 86, 101813.	1.5	13
30	Measuring hydraulic fracture apertures: a comparison of methods. <i>Solid Earth</i> , 2020, 11, 2411-2423.	1.2	12
31	Technical note: Disentangling the groundwater response to Earth and atmospheric tides to improve subsurface characterisation. <i>Hydrology and Earth System Sciences</i> , 2020, 24, 6033-6046.	1.9	14
32	Analyzing the heave of an entire city: Modeling of swelling processes in clay-sulfate rocks. <i>Engineering Geology</i> , 2019, 261, 105259.	2.9	7
33	Meeting the demand: geothermal heat supply rates for an urban quarter in Germany. <i>Geothermal Energy</i> , 2019, 7, .	0.9	20
34	Global detection of rainfall-triggered landslide clusters. <i>Natural Hazards and Earth System Sciences</i> , 2019, 19, 1433-1444.	1.5	23
35	Estimation of Groundwater Temperatures in Paris, France. <i>Geofluids</i> , 2019, 2019, 1-11.	0.3	20
36	Groundwater temperature anomalies in central Europe. <i>Environmental Research Letters</i> , 2019, 14, 104012.	2.2	30

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37	Error in hydraulic head and gradient time-series measurements: a quantitative appraisal. <i>Hydrology and Earth System Sciences</i> , 2019, 23, 3603-3629.	1.9	31
38	Temperature measurements along a vertical borehole heat exchanger: A method comparison. <i>Renewable Energy</i> , 2019, 143, 1247-1258.	4.3	16
39	Techno-economic and environmental analysis of an Aquifer Thermal Energy Storage (ATES) in Germany. <i>Geothermal Energy</i> , 2019, 7, .	0.9	40
40	The geothermal potential of cities. <i>Renewable and Sustainable Energy Reviews</i> , 2019, 106, 17-30.	8.2	118
41	Novel Instrument for Temperature Measurements in Borehole Heat Exchangers. <i>IEEE Transactions on Instrumentation and Measurement</i> , 2019, 68, 1062-1070.	2.4	6
42	Swelling laws for clay-sulfate rocks revisited. <i>Bulletin of Engineering Geology and the Environment</i> , 2018, 77, 399-408.	1.6	11
43	Comparing anthropogenic heat input and heat accumulation in the subsurface of Osaka, Japan. <i>Science of the Total Environment</i> , 2018, 643, 1127-1136.	3.9	23
44	Reactive Transport Modeling of Swelling Processes in Clay-sulfate Rocks. <i>Water Resources Research</i> , 2018, 54, 6543-6565.	1.7	8
45	Numerical Simulations and Validation of Contact Mechanics in a Granodiorite Fracture. <i>Rock Mechanics and Rock Engineering</i> , 2018, 51, 2805-2824.	2.6	43
46	Worldwide application of aquifer thermal energy storage – A review. <i>Renewable and Sustainable Energy Reviews</i> , 2018, 94, 861-876.	8.2	185
47	Recent trends of groundwater temperatures in Austria. <i>Hydrology and Earth System Sciences</i> , 2018, 22, 3143-3154.	1.9	20
48	Study on operation management of borehole heat exchangers for a large-scale hybrid ground source heat pump system in China. <i>Energy</i> , 2017, 123, 340-352.	4.5	26
49	Integrated assessment of agricultural nutrient pressures and legacies in karst landscapes. <i>Agriculture, Ecosystems and Environment</i> , 2017, 239, 246-256.	2.5	38
50	Identifying anthropogenic anomalies in air, surface and groundwater temperatures in Germany. <i>Science of the Total Environment</i> , 2017, 584-585, 145-153.	3.9	28
51	Global patterns of shallow groundwater temperatures. <i>Environmental Research Letters</i> , 2017, 12, 034005.	2.2	69
52	Fracture flow due to hydrothermally induced quartz growth. <i>Advances in Water Resources</i> , 2017, 107, 93-107.	1.7	27
53	Damage event analysis of vertical ground source heat pump systems in Germany. <i>Geothermal Energy</i> , 2017, 5, .	0.9	36
54	Integrated Research as Key to the Development of a Sustainable Geothermal Energy Technology. <i>Energy Technology</i> , 2017, 5, 965-1006.	1.8	4

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55	Increased ground temperatures in urban areas: Estimation of the technical geothermal potential. <i>Renewable Energy</i> , 2017, 103, 388-400.	4.3	70
56	Uncertainty assessment in 3-D geological models of increasing complexity. <i>Solid Earth</i> , 2017, 8, 515-530.	1.2	42
57	Increasing Fatal Landslides in Europe. , 2017, , 505-512.		1
58	Simulating stress-dependent fluid flow in a fractured core sample using real-time X-ray CT data. <i>Solid Earth</i> , 2016, 7, 1109-1124.	1.2	25
59	Fatal landslides in Europe. <i>Landslides</i> , 2016, 13, 1545-1554.	2.7	238
60	Influence of spatially variable ground heat flux on closed-loop geothermal systems: Line source model with nonhomogeneous Cauchy-type top boundary conditions. <i>Applied Energy</i> , 2016, 180, 572-585.	5.1	26
61	Extracting past atmospheric warming and urban heating effects from borehole temperature profiles. <i>Geothermics</i> , 2016, 64, 289-299.	1.5	39
62	A matter of meters: state of the art in the life cycle assessment of enhanced geothermal systems. <i>Energy and Environmental Science</i> , 2016, 9, 2720-2743.	15.6	43
63	Determination of the thermal conductivity of sandstones from laboratory to field scale. <i>Environmental Earth Sciences</i> , 2016, 75, 1.	1.3	13
64	Thermo-economic analysis of four different types of ground heat exchangers in energy piles. <i>Applied Thermal Engineering</i> , 2016, 108, 11-19.	3.0	52
65	Phase-field modeling of epitaxial growth of polycrystalline quartz veins in hydrothermal experiments. <i>Geofluids</i> , 2016, 16, 211-230.	0.3	38
66	A finite line source model with Cauchy-type top boundary conditions for simulating near surface effects on borehole heat exchangers. <i>Energy</i> , 2016, 98, 50-63.	4.5	58
67	A review of ground investigations for ground source heat pump (GSHP) systems. <i>Energy and Buildings</i> , 2016, 117, 160-175.	3.1	130
68	Linking Surface Urban Heat Islands with Groundwater Temperatures. <i>Environmental Science &amp; Technology</i> , 2016, 50, 70-78.	4.6	41
69	Swelling of Clay-Sulfate Rocks: A Review of Processes and Controls. <i>Rock Mechanics and Rock Engineering</i> , 2016, 49, 1533-1549.	2.6	39
70	Increased temperature in Urban ground as source of sustainable energy. <i>International Journal of Energy Production and Management</i> , 2016, 1, 263-271.	1.9	1
71	Groundwater temperature evolution in the subsurface urban heat island of Cologne, Germany. <i>Hydrological Processes</i> , 2015, 29, 965-978.	1.1	45
72	Technical Note: Field experiences using UV/VIS sensors for high-resolution monitoring of nitrate in groundwater. <i>Hydrology and Earth System Sciences</i> , 2015, 19, 1589-1598.	1.9	36

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73	Evolution of carbon isotope signatures during reactive transport of hydrocarbons in heterogeneous aquifers. <i>Journal of Contaminant Hydrology</i> , 2015, 174, 10-27.	1.6	16
74	Ground energy balance for borehole heat exchangers: Vertical fluxes, groundwater and storage. <i>Renewable Energy</i> , 2015, 83, 1341-1351.	4.3	37
75	Analytical simulation of groundwater flow and land surface effects on thermal plumes of borehole heat exchangers. <i>Applied Energy</i> , 2015, 146, 421-433.	5.1	73
76	Spatial resolution of anthropogenic heat fluxes into urban aquifers. <i>Science of the Total Environment</i> , 2015, 524-525, 427-439.	3.9	69
77	Flow-through experiments on water-rock interactions in a sandstone caused by CO <sub>2</sub> injection at pressures and temperatures mimicking reservoir conditions. <i>Applied Geochemistry</i> , 2015, 58, 136-146.	1.4	55
78	Flow through Experiment on CO <sub>2</sub> -brine-rock Interaction in a Sandstone from the Altmark Gas Reservoir. , 2015, , .		1
79	Observed groundwater temperature response to recent climate change. <i>Hydrology and Earth System Sciences</i> , 2014, 18, 4453-4466.	1.9	109
80	Mobilisation or dilution? Nitrate response of karst springs to high rainfall events. <i>Hydrology and Earth System Sciences</i> , 2014, 18, 4423-4435.	1.9	60
81	The Jabal Akhdar dome in the Oman Mountains: Evolution of a dynamic fracture system. <i>Numerische Mathematik</i> , 2014, 314, 1104-1139.	0.7	43
82	Preface: Hydrogeology of shallow thermal systems. <i>Hydrogeology Journal</i> , 2014, 22, 1-6.	0.9	8
83	Thermal tracer testing in a sedimentary aquifer: field experiment (Lauswiesen, Germany) and numerical simulation. <i>Hydrogeology Journal</i> , 2014, 22, 175-187.	0.9	35
84	Hydraulic characterization of aquifers by thermal response testing: Validation by large-scale tank and field experiments. <i>Water Resources Research</i> , 2014, 50, 71-85.	1.7	35
85	Statistical analysis correlating changing agronomic practices with nitrate concentrations in a karst aquifer in Ireland. , 2014, , .		5
86	Subsurface urban heat islands in German cities. <i>Science of the Total Environment</i> , 2013, 442, 123-133.	3.9	168
87	Analytical approach to groundwater-influenced thermal response tests of grouted borehole heat exchangers. <i>Geothermics</i> , 2013, 46, 22-31.	1.5	100
88	Fracture network evaluation program (FraNEP): A software for analyzing 2D fracture trace-line maps. <i>Computers and Geosciences</i> , 2013, 60, 11-22.	2.0	36
89	Evaluation of sampling methods for fracture network characterization using outcrops. <i>AAPG Bulletin</i> , 2013, 97, 1545-1566.	0.7	74
90	Sustainability and policy for the thermal use of shallow geothermal energy. <i>Energy Policy</i> , 2013, 59, 914-925.	4.2	201

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91	Review on life cycle environmental effects of geothermal power generation. <i>Renewable and Sustainable Energy Reviews</i> , 2013, 26, 446-463.	8.2	165
92	Impact of agronomic practices of an intensive dairy farm on nitrogen concentrations in a karst aquifer in Ireland. <i>Agriculture, Ecosystems and Environment</i> , 2013, 179, 187-199.	2.5	39
93	Long-Term Evolution of Anthropogenic Heat Fluxes into a Subsurface Urban Heat Island. <i>Environmental Science &amp; Technology</i> , 2013, 47, 9747-9755.	4.6	114
94	A general unified expression for solute and heat dispersion in homogeneous porous media. <i>Water Resources Research</i> , 2013, 49, 6166-6178.	1.7	20
95	Chemical changes in fluid composition due to CO <sub>2</sub> injection in the Altmark gas field: preliminary results from batch experiments. <i>Environmental Earth Sciences</i> , 2012, 67, 385-394.	1.3	26
96	Stable carbon isotope techniques to quantify CO <sub>2</sub> trapping under pre-equilibrium conditions and elevated pressures and temperatures. <i>Chemical Geology</i> , 2012, 320-321, 46-53.	1.4	15
97	Optimization of energy extraction for closed shallow geothermal systems using linear programming. <i>Geothermics</i> , 2012, 43, 57-65.	1.5	68
98	Numerical sensitivity study of thermal response tests. <i>Renewable Energy</i> , 2012, 41, 245-253.	4.3	128
99	Greenhouse gas emission savings of ground source heat pump systems in Europe: A review. <i>Renewable and Sustainable Energy Reviews</i> , 2012, 16, 1256-1267.	8.2	297
100	Modeling the long-term and transient evolution of biogeochemical and isotopic signatures in coal tar-contaminated aquifers. <i>Water Resources Research</i> , 2011, 47, .	1.7	23
101	Predicting <sup>13</sup> C/DIC dynamics in CCS: A scheme based on a review of inorganic carbon chemistry under elevated pressures and temperatures. <i>International Journal of Greenhouse Gas Control</i> , 2011, 5, 1250-1258.	2.3	28
102	Propagation of Seasonal Temperature Signals into an Aquifer upon Bank Infiltration. <i>Ground Water</i> , 2011, 49, 491-502.	0.7	47
103	Importance of heterocyclic aromatic compounds in monitored natural attenuation for coal tar contaminated aquifers: A review. <i>Journal of Contaminant Hydrology</i> , 2011, 126, 181-194.	1.6	82
104	A moving finite line source model to simulate borehole heat exchangers with groundwater advection. <i>International Journal of Thermal Sciences</i> , 2011, 50, 2506-2513.	2.6	252
105	Oberflächennahe Geothermie: Regelungsbedarf zur Berücksichtigung ökologischer and technischer Aspekte?. <i>Grundwasser</i> , 2011, 16, 67-68.	1.4	2
106	Evaluating the influence of thermal dispersion on temperature plumes from geothermal systems using analytical solutions. <i>International Journal of Thermal Sciences</i> , 2011, 50, 1223-1231.	2.6	138
107	Techno-economic and spatial analysis of vertical ground source heat pump systems in Germany. <i>Energy</i> , 2011, 36, 3002-3011.	4.5	140
108	The geothermal potential of urban heat islands. <i>Environmental Research Letters</i> , 2011, 6, 019501.	2.2	28

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109	Carbon and oxygen isotope indications for CO <sub>2</sub> behaviour after injection: First results from the Ketzin site (Germany). <i>International Journal of Greenhouse Gas Control</i> , 2010, 4, 1000-1006.	2.3	53
110	Modelo de flujo de fractura basado en imágenes satelitales de Wajid Sandstone, Saudi Arabia. <i>Hydrogeology Journal</i> , 2010, 18, 1699-1712.	0.9	16
111	Evaluation of the representative elementary volume (REV) of a fractured geothermal sandstone reservoir. <i>Environmental Earth Sciences</i> , 2010, 61, 1713-1724.	1.3	41
112	CO <sub>2</sub> savings of ground source heat pump systems – A regional analysis. <i>Renewable Energy</i> , 2010, 35, 122-127.	4.3	180
113	Is it only CO <sub>2</sub> that matters? A life cycle perspective on shallow geothermal systems. <i>Renewable and Sustainable Energy Reviews</i> , 2010, 14, 1798-1813.	8.2	191
114	International legal status of the use of shallow geothermal energy. <i>Renewable and Sustainable Energy Reviews</i> , 2010, 14, 2611-2625.	8.2	231
115	Evaluating MT3DMS for Heat Transport Simulation of Closed Geothermal Systems. <i>Ground Water</i> , 2010, 48, 741-756.	0.7	120
116	The geothermal potential of urban heat islands. <i>Environmental Research Letters</i> , 2010, 5, 044002.	2.2	125
117	Spatial characterization of the hydraulic conductivity using direct-push injection logging. <i>Water Resources Research</i> , 2010, 46, .	1.7	52
118	Optimization of the energy extraction of a shallow geothermal system. , 2010, , .		5
119	Quantification of biodegradation for o-xylene and naphthalene using first order decay models, Michaelis-Menten kinetics and stable carbon isotopes. <i>Journal of Contaminant Hydrology</i> , 2009, 105, 118-130.	1.6	43
120	Stochastic simulations of regional scale advective transport in fractured rock masses using block upscaled hydro-mechanical rock property data. <i>Journal of Hydrology</i> , 2009, 369, 318-325.	2.3	36
121	Field scale characterization and modeling of contaminant release from a coal tar source zone. <i>Journal of Contaminant Hydrology</i> , 2008, 102, 120-139.	1.6	26
122	Partial source zone removal. <i>Journal of Contaminant Hydrology</i> , 2008, 102, 1-2.	1.6	2
123	Dwarf: Delay-aWare Robust Forwarding for Energy-Constrained Wireless Sensor Networks. <i>Lecture Notes in Computer Science</i> , 2007, , 64-81.	1.0	17
124	Time Synchronization and Calibration in Wireless Sensor Networks. , 2005, , 199-237.		133
125	Performance assessment of a nuclear waste repository: Upscaling coupled hydro-mechanical properties for far-field transport analysis. <i>International Journal of Rock Mechanics and Minings Sciences</i> , 2005, 42, 781-792.	2.6	36
126	Internal synchronization of drift-constraint clocks in ad-hoc sensor networks. , 2004, , .		37



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127	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
128	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
129	Improved interval-based clock synchronization in sensor networks. , 2004, , .		41
130	Interval-based clock synchronization is resilient to mobility. , 0, , .		4