Dirk Schulze-Makuch

List of Publications by Year
in descending order

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179	4,744	117625	128289
papers	citations	34 h-index	60 g-index

190	190	190	4143
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Longitudinal dispersivity data and implications for scaling behavior. Ground Water, 2005, 43, 443-456.	1.3	264
2	Scale Dependency of Hydraulic Conductivity in Heterogeneous Media. Ground Water, 1999, 37, 904-919.	1.3	212
3	Transitory microbial habitat in the hyperarid Atacama Desert. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 2670-2675.	7.1	172
4	A Sulfur-Based Survival Strategy for Putative Phototrophic Life in the Venusian Atmosphere. Astrobiology, 2004, 4, 11-18.	3.0	149
5	Exploration of hydrothermal targets on Mars. Icarus, 2007, 189, 308-324.	2.5	140
6	Water droplets in oil are microhabitats for microbial life. Science, 2014, 345, 673-676.	12.6	118
7	A Two-Tiered Approach to Assessing the Habitability of Exoplanets. Astrobiology, 2011, 11, 1041-1052.	3.0	117
8	Limits of Life and the Habitability of Mars: The ESA Space Experiment BIOMEX on the ISS. Astrobiology, 2019, 19, 145-157.	3.0	111
9	GRS evidence and the possibility of paleooceans on Mars. Planetary and Space Science, 2009, 57, 664-684.	1.7	107
10	Biologically Enhanced Energy and Carbon Cycling on Titan?. Astrobiology, 2005, 5, 560-567.	3.0	106
11	The prospect of alien life in exotic forms on other worlds. Die Naturwissenschaften, 2006, 93, 155-172.	1.6	105
12	Reassessing the Possibility of Life on Venus: Proposal for an Astrobiology Mission. Astrobiology, 2002, 2, 197-202.	3.0	104
13	Recent geological and hydrological activity on Mars: The Tharsis/Elysium corridor. Planetary and Space Science, 2008, 56, 985-1013.	1.7	92
14	Supercritical Carbon Dioxide and Its Potential as a Life-Sustaining Solvent in a Planetary Environment. Life, 2014, 4, 331-340.	2.4	88
15	The Search for Alien Life in Our Solar System: Strategies and Priorities. Astrobiology, 2009, 9, 335-343.	3.0	87
16	Adaptation of an Antarctic lichen to Martian niche conditions can occur within 34 days. Planetary and Space Science, 2014, 98, 182-190.	1.7	82
17	Variations in hydraulic conductivity with scale of measurement during aquifer tests in heterogeneous, porous carbonate rocks. Hydrogeology Journal, 1998, 6, 204-215.	2.1	78
18	Optimizing the detection of carotene in cyanobacteria in a martian regolith analogue with a Raman spectrometer for the ExoMars mission. Planetary and Space Science, 2012, 60, 356-362.	1.7	77

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19	Noachian and more recent phyllosilicates in impact craters on Mars. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 12095-12100.	7.1	73
20	Microbial Survival Rates of Escherichia coli and Deinococcus radiodurans Under Low Temperature, Low Pressure, and UV-Irradiation Conditions, and Their Relevance to Possible Martian Life. Astrobiology, 2006, 6, 332-347.	3.0	68
21	Energy Cycling and Hypothetical Organisms in Europa's Ocean. Astrobiology, 2002, 2, 105-121.	3.0	64
22	The Last Possible Outposts for Life on Mars. Astrobiology, 2016, 16, 159-168.	3.0	63
23	Searching for Life on Mars Before It Is Too Late. Astrobiology, 2017, 17, 962-970.	3.0	61
24	A possible biogenic origin for hydrogen peroxide on Mars: the Viking results reinterpreted. International Journal of Astrobiology, 2007, 6, 147-152.	1.6	60
25	Assessing the Plausibility of Life on Other Worlds. Astrobiology, 2001, 1, 143-160.	3.0	49
26	Microbial Life in a Liquid Asphalt Desert. Astrobiology, 2011, 11, 241-258.	3.0	49
27	Scenarios for the evolution of life on Mars. Journal of Geophysical Research, 2005, 110, .	3.3	48
28	Assessing the Possibility of Biological Complexity on Other Worlds, with an Estimate of the Occurrence of Complex Life in the Milky Way Galaxy. Challenges, 2014, 5, 159-174.	1.7	48
29	Limnology of Pavilion Lake, B. C., Canada Characterization of a microbialite forming environment. Fundamental and Applied Limnology, 2009, 173, 329-351.	0.7	46
30	Subsurface formation of oxidants on Mars and implications for the preservation of organic biosignatures. Earth and Planetary Science Letters, 2008, 272, 456-463.	4.4	45
31	Venus, Mars, and the Ices on Mercury and the Moon: Astrobiological Implications and Proposed Mission Designs. Astrobiology, 2005, 5, 778-795.	3.0	44
32	Deliquescenceâ€induced wetting and RSLâ€like darkening of a Mars analogue soil containing various perchlorate and chloride salts. Geophysical Research Letters, 2016, 43, 4880-4884.	4.0	41
33	Locating Potential Biosignatures on Europa from Surface Geology Observations. Astrobiology, 2003, 3, 851-861.	3.0	39
34	Formation and disruption of aquifers in southwestern Chryse Planitia, Mars. Icarus, 2007, 191, 545-567.	2.5	38
35	Venus, an Astrobiology Target. Astrobiology, 2021, 21, 1163-1185.	3.0	38
36	The case for life on Mars. International Journal of Astrobiology, 2008, 7, 117-141.	1.6	37

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37	Evidence for Amazonian acidic liquid water on Marsâ€"A reinterpretation of MER mission results. Planetary and Space Science, 2009, 57, 276-287.	1.7	36
38	The Effect of Critical pH on Virus Fate and Transport in Saturated Porous Medium. Ground Water, 2003, 41, 701-708.	1.3	35
39	Cosmic Biology. , 2011, , .		35
40	A cold hydrological system in Gale crater, Mars. Planetary and Space Science, 2014, 93-94, 101-118.	1.7	34
41	Strategy for Modeling Putative Multilevel Ecosystems on Europa. Astrobiology, 2003, 3, 813-821.	3.0	33
42	Tier-Scalable Reconnaissance Missions For The Autonomous Exploration Of Planetary Bodies. , 2007, , .		32
43	The Biological Oxidant and Life Detection (BOLD) mission: A proposal for a mission to Mars. Planetary and Space Science, 2012, 67, 57-69.	1.7	32
44	Enhanced Microbial Survivability in Subzero Brines. Astrobiology, 2018, 18, 1171-1180.	3.0	32
45	New evidence for a magmatic influence on the origin of Valles Marineris, Mars. Journal of Volcanology and Geothermal Research, 2009, 185, 12-27.	2.1	31
46	New Priorities in the Robotic Exploration of Mars: The Case for In Situ Search for Extant Life. Astrobiology, 2010, 10, 705-710.	3.0	31
47	The Development of an Effective Bacterial Single-Cell Lysis Method Suitable for Whole Genome Amplification in Microfluidic Platforms. Micromachines, 2018, 9, 367.	2.9	31
48	Bacterial Growth in Chloride and Perchlorate Brines: Halotolerances and Salt Stress Responses ofPlanococcus halocryophilus. Astrobiology, 2019, 19, 1377-1387.	3.0	30
49	Methanogenic Archaea Can Produce Methane in Deliquescence-Driven Mars Analog Environments. Scientific Reports, 2020, 10, 6.	3.3	30
50	Thermal Energy and the Origin of Life. Origins of Life and Evolution of Biospheres, 2006, 36, 177-189.	1.9	28
51	Drastic environmental change and its effects on a planetary biosphere. Icarus, 2013, 225, 775-780.	2.5	28
52	Search parameters for the remote detection of extraterrestrial life. Planetary and Space Science, 2002, 50, 675-683.	1.7	27
53	Diverse Viruses Carrying Genes for Microbial Extremotolerance in the Atacama Desert Hyperarid Soil. MSystems, 2021, 6, .	3.8	27
54	Method developed for extrapolating scale behavior. Eos, 1997, 78, 3.	0.1	26

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55	A New Record for Microbial Perchlorate Tolerance: Fungal Growth in NaClO4 Brines and its Implications for Putative Life on Mars. Life, 2020, 10, 53.	2.4	26
56	The overprotection of Mars. Nature Geoscience, 2013, 6, 510-511.	12.9	25
57	Energy Sources and Life. , 2018, , 75-100.		25
58	Field Evaluation of the Effectiveness of Surfactant Modified Zeolite and Iron-Oxide-Coated Sand for Removing Viruses and Bacteria from Ground Water. Ground Water Monitoring and Remediation, 2003, 23, 68-74.	0.8	24
59	Geological and hydrological histories of the Argyre province, Mars. Icarus, 2015, 253, 66-98.	2.5	24
60	The Cosmic Zoo: The (Near) Inevitability of the Evolution of Complex, Macroscopic Life. Life, 2016, 6, 25.	2.4	24
61	Effects of Oxygen-Containing Salts on the Detection of Organic Biomarkers on Mars and in Terrestrial Analog Soils. Astrobiology, 2019, 19, 711-721.	3.0	24
62	Extraterrestrial hydrogeology. Hydrogeology Journal, 2005, 13, 51-68.	2.1	23
63	The search for life beyond Earth through fuzzy expert systems. Planetary and Space Science, 2008, 56, 448-472.	1.7	23
64	The Adaptability of Life on Earth and the Diversity of Planetary Habitats. Frontiers in Microbiology, 2017, 8, 2011.	3.5	23
65	Life in the Universe. , 2018, , .		23
66	Prime candidate sites for astrobiological exploration through the hydrogeological history of Mars. Planetary and Space Science, 2005, 53, 1355-1375.	1.7	22
67	Was There an Early Habitability Window for Earth's Moon?. Astrobiology, 2018, 18, 985-988.	3.0	22
68	Surfactant-modified zeolite can protect drinking water wells from viruses and bacteria. Eos, 2002, 83, 193-201.	0.1	20
69	Correlation between microbiological and chemical parameters of some hydrothermal springs in New Mexico, USA. Journal of Hydrology, 2003, 280, 272-284.	5.4	20
70	Thiophenes on Mars: Biotic or Abiotic Origin?. Astrobiology, 2020, 20, 552-561.	3.0	20
71	Adaptations to environmental extremes by multicellular organisms. International Journal of Astrobiology, 2007, 6, 199-215.	1.6	19
72	Fluorine-Rich Planetary Environments as Possible Habitats for Life. Life, 2014, 4, 374-385.	2.4	19

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73	Microbial Hotspots in Lithic Microhabitats Inferred from DNA Fractionation and Metagenomics in the Atacama Desert. Microorganisms, 2021, 9, 1038.	3.6	19
74	A roadmap for planetary caves science and exploration. Nature Astronomy, 2021, 5, 524-525.	10.1	19
75	Nearly Forty Years after Viking: Are We Ready for a New Life-Detection Mission?. Astrobiology, 2015, 15, 413-419.	3.0	18
76	Leave no stone unturned: individually adapted xerotolerant Thaumarchaeota sheltered below the boulders of the Atacama Desert hyperarid core. Microbiome, 2021, 9, 234.	11.1	18
77	Effects of pH and Geological Medium on Bacteriophage MS2 Transport in a Model Aquifer. Geomicrobiology Journal, 2003, 20, 73-84.	2.0	17
78	Meteorites at Meridiani Planum provide evidence for significant amounts of surface and nearâ€surface water on early Mars. Meteoritics and Planetary Science, 2011, 46, 1832-1841.	1.6	17
79	The Astrobiology of Alien Worlds: Known and Unknown Forms of Life. Universe, 2020, 6, 130.	2.5	17
80	Locally Targeted Ecosynthesis: A Proactive in situ Search for Extant Life on Other Worlds. Astrobiology, 2013, 13, 674-678.	3.0	16
81	In Search for a Planet Better than Earth: Top Contenders for a Superhabitable World. Astrobiology, 2020, 20, 1394-1404.	3.0	16
82	Sorption heat engines: Simple inanimate negative entropy generators. Physica A: Statistical Mechanics and Its Applications, 2006, 362, 369-381.	2.6	15
83	Another Earth 2.0? Not So Fast. Astrobiology, 2016, 16, 817-821.	3.0	15
84	The Microbial Enhanced Oil Recovery (MEOR) potential of Halanaerobiales under dynamic conditions in different porous media. Journal of Petroleum Science and Engineering, 2021, 196, 107578.	4.2	15
85	Microbiological and chemical characterization of hydrothermal fluids at Tortugas Mountain Geothermal Area, southern New Mexico, USA. Hydrogeology Journal, 2000, 8, 295-309.	2.1	14
86	Genetic code: Lucky chance or fundamental law of nature?. Physics of Life Reviews, 2004, 1, 202-229.	2.8	14
87	The Cosmic Zoo. , 2017, , .		14
88	The First Cell and the Origin of Life Challenge. , 2017, , 35-52.		14
89	Mechanisms of Evolutionary Innovation Point to Genetic Control Logic as the Key Difference Between Prokaryotes and Eukaryotes. Journal of Molecular Evolution, 2015, 81, 34-53.	1.8	13
90	Habitability Models for Astrobiology. Astrobiology, 2021, 21, 1017-1027.	3.0	13

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91	Automated Global Feature Analyzer - A Driver for Tier-Scalable Reconnaissance. Aerospace Conference Proceedings IEEE, 2008, , .	0.0	12
92	A formation mechanism for hematite-rich spherules on Mars. Planetary and Space Science, 2010, 58, 401-410.	1.7	12
93	New types of boulder accumulations in the hyper-arid Atacama Desert. Geomorphology, 2020, 350, 106897.	2.6	12
94	Applications of particle-tracking techniques to bank infiltration: a case study from El Paso, Texas, USA. Environmental Geology, 2008, 55, 505-515.	1.2	11
95	Planetary Protection and the astrobiological exploration of Mars: Proactive steps in moving forward. Advances in Space Research, 2019, 63, 1491-1497.	2.6	11
96	New type of sand wedge polygons in the salt cemented soils of the hyper-arid Atacama Desert. Geomorphology, 2021, 373, 107481.	2.6	11
97	Low frequency electromagnetic waves as a supplemental energy source to sustain microbial growth?. Die Naturwissenschaften, 2005, 92, 115-120.	1.6	10
98	Pavilion Lake Microbialites: Morphological, Molecular and Biochemical Evidence for a Cold-Water Transition to Colonial Aggregates. Life, 2013, 3, 21-37.	2.4	10
99	Microbial and chemical characterization of a groundwater flow system in an intermontane basin of southern New Mexico, USA. Hydrogeology Journal, 2003, 11, 401-412.	2.1	9
100	Testing the H2O2-H2O Hypothesis for Life on Mars with the TEGA Instrument on the Phoenix Lander. Astrobiology, 2008, 8, 205-214.	3.0	9
101	How Many Biochemistries Are Available To Build a Cell?. ChemBioChem, 2015, 16, 2137-2139.	2.6	9
102	The Physical, Chemical and Physiological Limits of Life. Life, 2015, 5, 1472-1486.	2.4	9
103	Autonomous exploration of planetary lava tubes using a multi-rover framework. , 2015, , .		9
104	Inhibition of microbial souring with molybdate and its application under reservoir conditions. International Biodeterioration and Biodegradation, 2021, 157, 105158.	3.9	9
105	Influence of surface mineralogy on the activity of Halanaerobium sp. during microbial enhanced oil recovery (MEOR). Fuel, 2021, 290, 119973.	6.4	9
106	Long-lived volcanism within Argyre basin, Mars. Icarus, 2017, 293, 8-26.	2.5	8
107	Is Searching for Martian Life a Priority for the Mars Community?. Astrobiology, 2018, 18, 101-107.	3.0	8
108	The Naked Mole-Rat: An Unusual Organism with an Unexpected Latent Potential for Increased Intelligence?. Life, 2019, 9, 76.	2.4	8

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109	Geochemical proxies for water-soil interactions in the hyperarid Atacama Desert, Chile. Catena, 2021, 206, 105531.	5.0	8
110	Physicochemical Parameters Limiting Growth of Debaryomyces hansenii in Solutions of Hygroscopic Compounds and Their Effects on the Habitability of Martian Brines. Life, 2021, 11, 1194.	2.4	8
111	A new hypothesis for the origin and redistribution of sulfates in the equatorial region of western Mars. Geophysical Research Letters, 2008, 35, .	4.0	7
112	Investigation of water signatures at gully-exposed sites on Mars by hyperspectral image analysis. Planetary and Space Science, 2009, 57, 93-104.	1.7	7
113	Extremophiles on Alien Worlds: What Types of Organismic Adaptations are Feasible on Other Planetary Bodies. Cellular Origin and Life in Extreme Habitats, 2013, , 253-265.	0.3	7
114	Planetary Imaging in Powers of Ten: A Multiscale, Multipurpose Astrobiological Imager. Astrobiology, 2013, 13, 1005-1010.	3.0	7
115	Nutrient and population dynamics in a subglacial reservoir: a simulation case study of the Blood Falls ecosystem with implications for astrobiology. International Journal of Astrobiology, 2013, 12, 304-311.	1.6	7
116	Amino acid synthesis in Europa's subsurface environment. International Journal of Astrobiology, 2008, 7, 193-203.	1.6	6
117	Possibilities for the detection of hydrogen peroxideâ€“water-based life on Mars by the Phoenix Lander. Planetary and Space Science, 2009, 57, 449-453.	1.7	6
118	The power of social structure: how we became an intelligent lineage. International Journal of Astrobiology, 2011, 10, 15-23.	1.6	6
119	Glacial paleoenvironments on Mars revealed by the paucity of hydrated silicates in the Noachian crust of the Northern Lowlands. Planetary and Space Science, 2012, 70, 126-133.	1.7	6
120	Simulations of Prebiotic Chemistry under Post-Impact Conditions on Titan. Life, 2013, 3, 538-549.	2.4	6
121	Time to consider search strategies for complex life on exoplanets. Nature Astronomy, 2018, 2, 432-433.	10.1	6
122	Machine Learning Algorithms Applied to Identify Microbial Species by Their Motility. Life, 2021, 11, 44.	2.4	6
123	The Case (or Not) for Life in the Venusian Clouds. Life, 2021, 11, 255.	2.4	6
124	Whole genome sequencing of cyanobacterium Nostoc sp. CCCryo 231-06 using microfluidic single cell technology. IScience, 2022, 25, 104291.	4.1	6
125	Functional Traits Co-Occurring with Mobile Genetic Elements in the Microbiome of the Atacama Desert. Diversity, 2019, 11, 205.	1.7	5
126	A chemical and microbial characterization of selected mud volcanoes in Trinidad reveals pathogens introduced by surface water and rain water. Science of the Total Environment, 2020, 707, 136087.	8.0	5

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127	Physicochemical Salt Solution Parameters Limit the Survival of Planococcus halocryophilus in Martian Cryobrines. Frontiers in Microbiology, 2020, 11, 1284.	3.5	5
128	Introduction to the Special Paper Collection: Methodologies and Techniques for Detecting Extraterrestrial (Microbial) Life. Astrobiology, 2003, 3, 487-488.	3.0	4
129	The Solar Wind Power Satellite as an alternative to a traditional Dyson Sphere and its implications for remote detection. International Journal of Astrobiology, 2010, 9, 89-99.	1.6	4
130	The landscape of life. , 2015, , 81-94.		4
131	The Argyre Region as a Prime Target forin situAstrobiological Exploration of Mars. Astrobiology, 2016, 16, 143-158.	3.0	4
132	Pre-conditions for Complex Life. , 2017, , 13-32.		4
133	Life and the Need for a Solvent. , 2018, , 123-147.		3
134	Suspended Animation. , 2011, , 153-172.		3
135	Application of Raman Spectroscopy as In Situ Technology for the Search for Life. Cellular Origin and Life in Extreme Habitats, 2013, , 331-345.	0.3	3
136	The Biological Oxidant and Life Detection (BOLD) mission: an outline for a new mission to Mars. Proceedings of SPIE, 2007, , .	0.8	2
137	Session 3. Approaches and Technologies to Detect Life on Mars. Astrobiology, 2008, 8, 302-305.	3.0	2
138	The immune system as key to cancer treatment: Triggering its activity with microbial agents. Bioscience Hypotheses, 2009, 2, 388-392.	0.2	2
139	Effects of Low-Temperature Plasma-Sterilization on Mars Analog Soil Samples Mixed with Deinococcus radiodurans. Life, 2016, 6, 22.	2.4	2
140	Evaluating the Microbial Habitability of Rogue Planets and Proposing Speculative Scenarios on How They Might Act as Vectors for Panspermia. Life, 2021, 11, 833.	2.4	2
141	Organic Molecules in Lunar Ice: A Window to the Early Evolution of Life on Earth. Cellular Origin and Life in Extreme Habitats, 2013, , 115-125.	0.3	2
142	Astrobiology and the Search for Life in the Universe. , 0, , 349-358.		2
143	Building Blocks of Life. , 2018, , 101-121.		2
144	Searching for Life Beyond Our Planet: Are We There Yet?. Eos, 2010, 91, 280-280.	0.1	1

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145	A Dynamic Scheme to Assess Habitability of Exoplanets. Cellular Origin and Life in Extreme Habitats, 2012, , 307-321.	0.3	1
146	The First Multicellular Organisms. , 2017, , 107-120.		1
147	The ALH84001 Case for Life on Mars. Cellular Origin and Life in Extreme Habitats, 2009, , 471-489.	0.3	1
148	Survey of the Outline of an Early Roman Marching-camp in Germany by Rammner's Current Line Pertubation Method. Journal of Archaeological Science, 1996, 23, 883-887.	2.4	0
149	The hydrogen peroxide-water hypothesis for life on Mars and the problem of detection. Proceedings of SPIE, 2007, , .	0.8	0
150	Frozen Desert. , 2011, , 105-135.		0
151	Rare Earths and Life Unseen. , 2011, , 1-14.		0
152	A question of Curiosity. New Scientist, 2016, 231, 18-19.	0.0	0
153	Endosymbiosis and the First Eukaryotes. , 2017, , 77-94.		0
154	How to Test the Cosmic Zoo Hypothesis. , 2017, , 181-200.		0
155	Life Detection: Past and Present. , 2018, , 183-202.		0
156	Exoplanets and Exomoons. , 2018, , 229-246.		0
157	The Future and Fate of Living Systems. , 2018, , 255-264.		0
158	The Search for Extraterrestrial Intelligent Life. , 2018, , 265-273.		0
159	Optimizing Space Exploration. , 2018, , 275-286.		0
160	Signatures of Life. , 2018, , 165-181.		0
161	Lessons from the History of Life on Earth. , 2018, , 51-73.		0
162	Review of David Deamer's Book Assembling Life: How Can Life Begin on Earth and Other Habitable Planets?. Astrobiology, 2019, 19, 1540-1541.	3.0	0

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163	Evolution of default genetic control mechanisms. PLoS ONE, 2021, 16, e0251568.	2.5	0
164	Petrolakes. , 2011, , 225-251.		0
165	Deep and Dark. , 2011, , 173-200.		0
166	Astrobiologyâ€"a melting pot of open scientific questions. Science and Fiction, 2014, , 225-236.	0.0	0
167	Alien Encounter. Science and Fiction, 2014, , .	0.0	0
168	Intelligence, a New Concept?. , 2017, , 137-162.		0
169	Technologically Advanced Intelligence. , 2017, , 163-177.		0
170	The Cosmic Zoo Hypothesis and the Evolutionary Tool Set. , 2017, , 3-12.		0
171	Habitats of Life. , 2018, , 149-164.		0
172	Intelligenz â€“ ein neues Konzept?. , 2019, , 163-192.		0
173	Wie erkennen wir ein lebendiges Universum?. , 2019, , 213-236.		0
174	Die erste Zelle und das Problem vom Ursprung des Lebens. , 2019, , 41-62.		0
175	Die ersten Vielzeller. , 2019, , 127-142.		0
176	Die Hypothese vom lebendigen Universum und der Werkzeugkasten der Evolution. , 2019, , 3-13.		0
177	Technologisch fortgeschrittene Intelligenz. , 2019, , 193-209.		0
178	Voraussetzungen fÃ¼r komplexes Leben. , 2019, , 15-38.		0
179	Endosymbiose und die ersten Eukaryoten. , 2019, , 93-112.		0