

# George Helffrich

## List of Publications by Year in descending order

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101  
papers

4,750  
citations

100601

38  
h-index

116156

66  
g-index

108  
all docs

108  
docs citations

108  
times ranked

3557  
citing authors

#	ARTICLE	IF	CITATIONS
1	High-Pressure Melting Curve of FeH: Implications for Eutectic Melting Between Fe and Non-Magnetic FeH. <i>Journal of Geophysical Research: Solid Earth</i> , 2022, 127, .	1.4	7
2	Thermodynamical Modeling of Liquid Fe-Si-Mg-O: Molten Magnesium Silicate Release From the Core. <i>Geophysical Research Letters</i> , 2020, 47, e2020GL089218.	1.5	15
3	Anisotropy at the Inner Core Boundary. <i>Geophysical Research Letters</i> , 2019, 46, 11959-11967.	1.5	7
4	Melting Curve and Equation of State of $\text{Fe}_7\text{N}_3$ : Nitrogen in the Core?. <i>Journal of Geophysical Research: Solid Earth</i> , 2019, 124, 3448-3457.	1.4	11
5	Comment on "Crustal thickness across the Trans-European Suture Zone from ambient noise autocorrelations" by G. Becker and B. Knapmeyer-Endrun. <i>Geophysical Journal International</i> , 2019, 217, 906-908.	1.0	3
6	The chemical case for Mercury mantle stripping. <i>Progress in Earth and Planetary Science</i> , 2019, 6, .	1.1	5
7	Constraints on the structure of the crust and lithosphere beneath the Azores Islands from teleseismic receiver functions. <i>Geophysical Journal International</i> , 2018, 213, 824-835.	1.0	19
8	Core-Exsolved $\text{SiO}_2$ Dispersal in the Earth's Mantle. <i>Journal of Geophysical Research: Solid Earth</i> , 2018, 123, 176-188.	1.4	14
9	Isotopic signature of core-derived $\text{SiO}_2$ . <i>American Mineralogist</i> , 2018, 103, 1161-1164.	0.9	3
10	Crystallization of silicon dioxide and compositional evolution of the Earth's core. <i>Nature</i> , 2017, 543, 99-102.	13.7	161
11	A finite strain approach to thermal expansivity's pressure dependence. <i>American Mineralogist</i> , 2017, 102, 1690-1695.	0.9	5
12	Emergence and evolution of Santa Maria Island (Azores) - The conundrum of uplifted islands revisited. <i>Bulletin of the Geological Society of America</i> , 2017, 129, 372-390.	1.6	92
13	Feasibility of a magma ocean dynamo on Mars. <i>Progress in Earth and Planetary Science</i> , 2017, 4, .	1.1	1
14	Mars core structure - concise review and anticipated insights from InSight. <i>Progress in Earth and Planetary Science</i> , 2017, 4, .	1.1	23
15	The hard sphere view of the outer core. <i>Earth, Planets and Space</i> , 2015, 67, .	0.9	5
16	Hydrous upwelling across the mantle transition zone beneath the Afar Triple Junction. <i>Geochemistry, Geophysics, Geosystems</i> , 2015, 16, 834-846.	1.0	39
17	CAN-HK: An a Priori Crustal Model for the Canadian Shield. <i>Seismological Research Letters</i> , 2015, 86, 1374-1382.	0.8	6
18	Hazard potential of volcanic flank collapses raised by new megatsunami evidence. <i>Science Advances</i> , 2015, 1, e1500456.	4.7	103

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19	The Hudson Bay Lithospheric Experiment (HuBLE): insights into Precambrian plate tectonics and the development of mantle keels. Geological Society Special Publication, 2015, 389, 41-67.	0.8	18
20	Outer core compositional layering and constraints on core liquid transport properties. Earth and Planetary Science Letters, 2014, 391, 256-262.	1.8	31
21	MOZART: A Seismological Investigation of the East African Rift in Central Mozambique. Seismological Research Letters, 2014, 85, 108-116.	0.8	27
22	Geophysical Constraints on Mantle Composition. , 2014, , 41-65.		8
23	Causes and consequences of outer core stratification. Physics of the Earth and Planetary Interiors, 2013, 223, 2-7.	0.7	34
24	Seismic evidence of a regional sublithospheric low velocity layer beneath the Canary Islands. Tectonophysics, 2013, 608, 586-599.	0.9	36
25	Vp structure of the outermost core derived from analysing large-scale array data of SmKS waves. Geophysical Journal International, 2013, 193, 1537-1555.	1.0	37
26	Subducted Lithospheric Slab Velocity Structure: Observations and Mineralogical Inferences. Geophysical Monograph Series, 2013, , 215-222.	0.1	20
27	Upper mantle anisotropy of Southeast Arabia passive margin [Gulf of Aden Northern conjugate margin], Oman. Frontiers in Earth Sciences, 2013, , 429-438.	0.1	5
28	Plume scar in the mantle lithosphere beneath the Seychelles revealed by seismic imaging. Earth and Planetary Science Letters, 2012, 355-356, 20-31.	1.8	12
29	Upper mantle anisotropy of southeast Arabia passive margin [Gulf of Aden northern conjugate margin], Oman. Arabian Journal of Geosciences, 2012, 5, 925-934.	0.6	7
30	How light element addition can lower core liquid wave speeds. Geophysical Journal International, 2012, 188, 1065-1070.	1.0	21
31	Basal reflector under the Philippine Sea Plate. Geophysical Journal International, 2012, 189, 659-668.	1.0	11
32	Sulfide melts and long-term low seismic wavespeeds in lithospheric and asthenospheric mantle. Geophysical Research Letters, 2011, 38, n/a-n/a.	1.5	18
33	Implications of a simple mantle transition zone beneath cratonic North America. Earth and Planetary Science Letters, 2011, 312, 28-36.	1.8	34
34	Crustal structure beneath Hudson Bay from ambient-noise tomography: implications for basin formation. Geophysical Journal International, 2011, 184, 65-82.	1.0	46
35	Precambrian plate tectonics: Seismic evidence from northern Hudson Bay, Canada. Geology, 2011, 39, 91-94.	2.0	43
36	J. Havskov & L. OttemÅriller 2010. Routine Data Processing in Earthquake Seismology. xi + 347pp. Springer. Price £81.00, US \$120.00 (HB). ISBN 978 90 481 8696 9.. Geological Magazine, 2011, 148, 507-507.	0.9	1

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37	A late Archaean radiating dyke swarm as possible clue to the origin of the Bushveld Complex. <i>Nature Geoscience</i> , 2011, 4, 865-869.	5.4	39
38	Vertical movements of ocean island volcanoes: Insights from a stationary plate environment. <i>Marine Geology</i> , 2010, 275, 84-95.	0.9	47
39	Seismic activity at Cadamosto seamount near Fogo Island, Cape Verdes-formation of a new ocean island?. <i>Geophysical Journal International</i> , 2010, 180, 552-558.	1.0	19
40	Outer-core compositional stratification from observed core wave speed profiles. <i>Nature</i> , 2010, 468, 807-810.	13.7	159
41	Episodic swell growth inferred from variable uplift of the Cape Verde hotspot islands. <i>Nature Geoscience</i> , 2010, 3, 774-777.	5.4	59
42	Tracers of uplift and subsidence in the Cape Verde archipelago. <i>Journal of the Geological Society</i> , 2010, 167, 519-538.	0.9	70
43	Transition zone structure under a stationary hot spot: Cape Verde. <i>Earth and Planetary Science Letters</i> , 2010, 289, 156-161.	1.8	26
44	Precambrian crustal evolution: Seismic constraints from the Canadian Shield. <i>Earth and Planetary Science Letters</i> , 2010, 297, 655-666.	1.8	102
45	Small scale heterogeneity in the mid-lower mantle beneath the circum-Pacific area. <i>Physics of the Earth and Planetary Interiors</i> , 2010, 183, 91-103.	0.7	55
46	Grid search inversion of teleseismic receiver functions. <i>Geophysical Journal International</i> , 2009, 178, 513-523.	1.0	18
47	Probing two low-velocity regions with PKPb-caustic amplitudes and scattering. <i>Geophysical Journal International</i> , 2009, 178, 503-512.	1.0	32
48	Paul Silver 1949-2009. <i>Astronomy and Geophysics</i> , 2009, 50, 6.34-6.35.	0.1	0
49	Lower mantle scattering profiles and fabric below Pacific subduction zones. <i>Earth and Planetary Science Letters</i> , 2009, 282, 234-239.	1.8	36
50	Nature of the Moho beneath the Scottish Highlands from a receiver function perspective. <i>Tectonophysics</i> , 2009, 479, 214-222.	0.9	12
51	Physical contradictions and remedies using simple polythermal equations of state. <i>American Mineralogist</i> , 2009, 94, 1616-1619.	0.9	19
52	Inner-core shear-wave anisotropy and texture from an observation of PKJKP waves. <i>Nature</i> , 2008, 454, 873-876.	13.7	56
53	POST-PEROVSKITE: THE LAST MANTLE PHASE TRANSITION.: K. Hirose, J. Brodholt, T. Lay, D. Yuen, Eds. (2007) American Geophysical Union, Geophysical Monograph Series, 174. 350 pages, hardbound. ISBN 13: 978-0-87590-439-9. \$104.00 (AGU Member Price: \$72.80).. <i>American Mineralogist</i> , 2008, 93, 1947-1948.	0.9	0
54	Erratum to Extended-Time Multitaper Frequency Domain Cross-Correlation Receiver-Function Estimation. <i>Bulletin of the Seismological Society of America</i> , 2008, 98, 1608-1608.	1.1	0

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55	Chemical versus thermal heterogeneity in the lower mantle: The most likely role of anelasticity. <i>Earth and Planetary Science Letters</i> , 2007, 262, 429-437.	1.8	43
56	Spatial and temporal constraints on sources of seismic anisotropy: Evidence from the Scottish highlands. <i>Geophysical Research Letters</i> , 2007, 34, .	1.5	43
57	Heterogeneity in the mantle—its creation, evolution and destruction. <i>Tectonophysics</i> , 2006, 416, 23-31.	0.9	19
58	Extended-Time Multitaper Frequency Domain Cross-Correlation Receiver-Function Estimation. <i>Bulletin of the Seismological Society of America</i> , 2006, 96, 344-347.	1.1	129
59	Small-scale seismic heterogeneity and mantle structure. <i>Astronomy and Geophysics</i> , 2006, 47, 1.20-1.26.	0.1	3
60	Core-mantle boundary structure investigated using SKS and SKKS polarization anomalies. <i>Geophysical Journal International</i> , 2006, 165, 288-302.	1.0	53
61	Hydroacoustic detection of volcanic ocean-island earthquakes. <i>Geophysical Journal International</i> , 2006, 167, 1529-1536.	1.0	16
62	Depleted swell root beneath the Cape Verde Islands. <i>Geology</i> , 2006, 34, 449.	2.0	83
63	Trouble under Tonga?. <i>Nature</i> , 2005, 436, 637-638.	13.7	2
64	Seismological Constraints on Core Composition from Fe-O-S Liquid Immiscibility. <i>Science</i> , 2004, 306, 2239-2242.	6.0	76
65	A scattering region near the core-mantle boundary under the North Atlantic. <i>Geophysical Journal International</i> , 2004, 158, 625-636.	1.0	35
66	Transition zone structure in a tectonically inactive area: 410 and 660 km discontinuity properties under the northern North Sea. <i>Geophysical Journal International</i> , 2003, 155, 193-199.	1.0	21
67	Subparallel dipping heterogeneities in the mid-lower mantle. <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	58
68	Mapping fine-scale heterogeneities within the continental mantle lithosphere beneath Scotland: Combining active- and passive-source seismology. <i>Geology</i> , 2003, 31, 477.	2.0	23
69	Basic principles of electromagnetic and seismological investigation of shallow subduction zone structure. <i>Geophysical Monograph Series</i> , 2003, , 47-57.	0.1	0
70	Chemical and seismological constraints on mantle heterogeneity. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2002, 360, 2493-2505.	1.6	11
71	A local, crossing-path study of attenuation and anisotropy of the inner core. <i>Geophysical Research Letters</i> , 2002, 29, 9-1.	1.5	26
72	A teleseismic shear-wave splitting study to investigate mantle flow around South America and implications for plate-driving forces. <i>Geophysical Journal International</i> , 2002, 149, F1-F7.	1.0	33

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73	Thermal variations in the mantle inferred from 660 km discontinuity topography and tomographic wave speed variations. <i>Geophysical Journal International</i> , 2002, 151, 935-943.	1.0	8
74	Estimate of inner core rotation rate from United Kingdom regional seismic network data and consequences for inner core dynamical behaviour. <i>Earth and Planetary Science Letters</i> , 2001, 193, 523-537.	1.8	28
75	Seismic discontinuities and subduction zones. <i>Physics of the Earth and Planetary Interiors</i> , 2001, 127, 35-49.	0.7	67
76	SPICeD: imaging the deep Earth. <i>Astronomy and Geophysics</i> , 2001, 42, 3.26-3.29.	0.1	8
77	The thermal influence of the subducting slab beneath South America from 410 and 660 km discontinuity observations. <i>Geophysical Journal International</i> , 2001, 147, 319-329.	1.0	24
78	The Earth's mantle. <i>Nature</i> , 2001, 412, 501-507.	13.7	307
79	Topography of the transition zone seismic discontinuities. <i>Reviews of Geophysics</i> , 2000, 38, 141-158.	9.0	241
80	Teleseismic shear wave splitting measurements in noisy environments. <i>Geophysical Journal International</i> , 1999, 137, 821-830.	1.0	88
81	Dipping Low-Velocity Layer in the Mid-Lower Mantle: Evidence for Geochemical Heterogeneity. <i>Science</i> , 1999, 283, 1888-1892.	6.0	149
82	Practical use of Suzuki's thermal expansivity formulation. <i>Physics of the Earth and Planetary Interiors</i> , 1999, 116, 133-136.	0.7	7
83	The elusive coldfinger. <i>Nature</i> , 1998, 395, 119-120.	13.7	6
84	Detection of lower mantle scatterers northeast of the Marianna subduction zone using short-period array data. <i>Journal of Geophysical Research</i> , 1998, 103, 4825-4838.	3.3	97
85	Topography of the 410 and 660 km seismic discontinuities in the Izu-Bonin Subduction Zone. <i>Geophysical Research Letters</i> , 1997, 24, 1535-1538.	1.5	92
86	Shear wave splitting around the northern Atlantic: frozen Pangaeian lithospheric anisotropy?. <i>Tectonophysics</i> , 1997, 279, 135-148.	0.9	56
87	Slab low-velocity layer in the eastern Aleutian subduction zone. <i>Geophysical Journal International</i> , 1997, 130, 640-648.	1.0	49
88	How good are routinely determined focal mechanisms? Empirical statistics based on a comparison of Harvard, USGS and ERI moment tensors. <i>Geophysical Journal International</i> , 1997, 131, 741-750.	1.0	92
89	GEBCO DIGITAL ATLAS. <i>Terra Nova</i> , 1996, 8, 659-661.	0.9	6
90	410 km discontinuity sharpness and the form of the olivine $\pm$ - $\hat{l}^2$ phase diagram: resolution of apparent seismic contradictions. <i>Geophysical Journal International</i> , 1996, 126, F7-F12.	1.0	80

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91	Lithospheric deformation inferred from teleseismic shear wave splitting observations in the United Kingdom. <i>Journal of Geophysical Research</i> , 1995, 100, 18195-18204.	3.3	40
92	Shear-wave splitting variation over short spatial scales on continents. <i>Geophysical Journal International</i> , 1994, 119, 561-573.	1.0	62
93	Scatter and bias in differential PKP travel times and implications for mantle and core phenomena. <i>Geophysical Research Letters</i> , 1994, 21, 2167-2170.	1.5	24
94	Frequency dependence of the visibility and depths of mantle seismic discontinuities. <i>Geophysical Research Letters</i> , 1994, 21, 2613-2616.	1.5	57
95	Phase transition Clapeyron slopes and transition zone seismic discontinuity topography. <i>Journal of Geophysical Research</i> , 1994, 99, 15853.	3.3	450
96	Study of the structure of the slab-mantle interface using reflected and converted seismic waves. <i>Geophysical Journal International</i> , 1993, 115, 14-40.	1.0	37
97	Relationship of deep seismicity to the thermal structure of subducted lithosphere. <i>Nature</i> , 1991, 353, 252-255.	13.7	46
98	Internal structure of the Earth. <i>Nature</i> , 1990, 344, 106-106.	13.7	6
99	The stability of sodalite in the system NaAlSiO <sub>4</sub> -NaCl. <i>Geochimica Et Cosmochimica Acta</i> , 1989, 53, 1943-1954.	1.6	63
100	Subduction zone thermal structure and mineralogy and their relationship to seismic wave reflections and conversions at the slab/mantle interface. <i>Journal of Geophysical Research</i> , 1989, 94, 753-763.	3.3	116
101	A stacking approach to estimate VP/VS from receiver functions. <i>Geophysical Journal International</i> , 0, 182, 899-902.	1.0	10