Shijie Zhong

List of Publications by Year
in descending order

99 papers	7,925 citations	50276 46 h-index	49909 87 g-index
99 all docs	99 docs citations	99 times ranked	3682 citing authors

#	Article	IF	Citations
1	Internal Structure and Early Thermal Evolution of Mars from Mars Global Surveyor Topography and Gravity. Science, 2000, 287, 1788-1793.	12.6	518
2	Role of temperature-dependent viscosity and surface plates in spherical shell models of mantle convection. Journal of Geophysical Research, 2000, 105, 11063-11082.	3.3	493
3	Computations of the viscoelastic response of a 3-D compressible Earth to surface loading: an application to Glacial Isostatic Adjustment in Antarctica and Canada. Geophysical Journal International, 2013, 192, 557-572.	2.4	464
4	Thermochemical structures beneath Africa and the Pacific Ocean. Nature, 2005, 437, 1136-1139.	27.8	394
5	Inference of mantle viscosity from GRACE and relative sea level data. Geophysical Journal International, 2007, 171, 497-508.	2.4	314
6	A benchmark study on mantle convection in a 3â€Ð spherical shell using CitcomS. Geochemistry, Geophysics, Geosystems, 2008, 9, .	2.5	254
7	Supercontinent cycles, true polar wander, and very long-wavelength mantle convection. Earth and Planetary Science Letters, 2007, 261, 551-564.	4.4	253
8	Supercontinentâ€“superplume coupling, true polar wander and plume mobility: Plate dominance in whole-mantle tectonics. Physics of the Earth and Planetary Interiors, 2009, 176, 143-156.	1.9	229
9	Degree-1 mantle convection and the crustal dichotomy on Mars. Earth and Planetary Science Letters, 2001, 189, 75-84.	4.4	223
10	Thermochemical structures within a spherical mantle: Superplumes or piles?. Journal of Geophysical Research, 2004, 109, .	3.3	210
11	Constraints on thermochemical convection of the mantle from plume heat flux, plume excess temperature, and upper mantle temperature. Journal of Geophysical Research, 2006, 111, .	3.3	182
12	Role of plates and temperature-dependent viscosity in phase change dynamics. Journal of Geophysical Research, 1994, 99, 15903.	3.3	155
13	The accuracy of finite element solutions of Stokes's flow with strongly varying viscosity. Physics of the Earth and Planetary Interiors, 1996, 97, 83-94.	1.9	148
14	Role of faults, nonlinear rheology, and viscosity structure in generating plates from instantaneous mantle flow models. Journal of Geophysical Research, 1998, 103, 15255-15268.	3.3	142
15	Degree-1 convection in the Martian mantle and the origin of the hemispheric dichotomy. Journal of Geophysical Research, 2006, 111, .	3.3	141
16	A dynamic origin for the global asymmetry of lunar mare basalts. Earth and Planetary Science Letters, 2000, 177, 131-140.	4.4	127
17	Dynamic feedback between a continentlike raft and thermal convection. Journal of Geophysical Research, 1993, 98, 12219-12232.	3.3	124
18	Three-dimensional finite-element modelling of Earth's viscoelastic deformation: effects of lateral variations in lithospheric thickness. Geophysical Journal International, 2003, 155, 679-695.	2.4	121

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19	A model for the evolution of the Earth's mantle structure since the Early Paleozoic. Journal of Geophysical Research, 2010, 115, .	3.3	113
20	Modelling post-glacial rebound with lateral viscosity variations. Geophysical Journal International, 2005, 163, 357-371.	2.4	112
21	Effects of plate and slab viscosities on the geoid. Earth and Planetary Science Letters, 1999, 170, 487-496.	4.4	104
22	On the location of plumes and lateral movement of thermochemical structures with high bulk modulus in the 3-D compressible mantle. Geochemistry, Geophysics, Geosystems, 2011, 12, n/a-n/a.	2.5	100
23	Controls on sublithospheric small-scale convection. Journal of Geophysical Research, 2003, 108, .	3.3	99
24	Interaction of weak faults and non-newtonian rheology produces plate tectonics in a 3D model of mantle flow. Nature, 1996, 383, 245-247.	27.8	97
25	New evidence for dislocation creep from 3-D geodynamic modeling of the Pacific upper mantle structure. Earth and Planetary Science Letters, 2005, 238, 146-155.	4.4	89
26	A community benchmark for 2-D Cartesian compressible convection in the Earth's mantle. Geophysical Journal International, 2010, 180, 73-87.	2.4	89
27	Role of ocean-continent contrast and continental keels on plate motion, net rotation of lithosphere, and the geoid. Journal of Geophysical Research, 2001, 106, 703-712.	3.3	88
28	Mixing in a 3D spherical model of present-day mantle convection. Earth and Planetary Science Letters, 1999, 171, 533-547.	4.4	83
29	How Did Early Earth Become Our Modern World?. Annual Review of Earth and Planetary Sciences, 2014, 42, 151-178.	11.0	82
30	Constraints on the dynamics of mantle plumes from uplift of the Hawaiian Islands. Earth and Planetary Science Letters, 2002, 203, 105-116.	4.4	79
31	Long-wavelength topographic relaxation for self-gravitating planets and implications for the time-dependent compensation of surface topography. Journal of Geophysical Research, 2000, 105, 4153-4164.	3.3	76
32	Lithospheric deformation induced by loading of the Hawaiian Islands and its implications for mantle rheology. Journal of Geophysical Research: Solid Earth, 2013, 118, 6025-6048.	3.4	74
33	Limitations on the inversion for mantle viscosity from postglacial rebound. Geophysical Journal International, 2007, 168, 1195-1209.	2.4	73
34	Migration of Tharsis volcanism on Mars caused by differential rotation of the lithosphere. Nature Geoscience, 2009, 2, 19-23.	12.9	70
35	Effects of lateral viscosity variations on the geoid. Geophysical Research Letters, 2010, 37, .	4.0	68
36	Controls on plume heat flux and plume excess temperature. Journal of Geophysical Research, 2008, 113, .	3.3	67

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37	Controls on geomagnetic reversals and core evolution by mantle convection in the Phanerozoic. Physics of the Earth and Planetary Interiors, 2013, 214, 87-103.	1.9	67
38	Sublithospheric small-scale convection and its implications for the residual topography at old ocean basins and the plate model. Journal of Geophysical Research, 2005, 110, .	3.3	66
39	Heat fluxes at the Earth's surface and coreâ€“mantle boundary since Pangea formation and their implications for the geomagnetic superchrons. Earth and Planetary Science Letters, 2011, 306, 205-216.	4.4	65
40	Slab stagnation due to a reduced viscosity layer beneath the mantle transition zone. Nature Geoscience, 2018, 11, 876-881.	12.9	62
41	Entrainment of a dense layer by thermal plumes. Geophysical Journal International, 2003, 154, 666-676.	2.4	61
42	Coreâ€“mantle boundary topography as a possible constraint on lower mantle chemistry and dynamics. Earth and Planetary Science Letters, 2010, 289, 232-241.	4.4	60
43	On the competing roles of fault reactivation and brittle failure in generating plate tectonics from mantle convection. Geophysical Monograph Series, 2000, , 73-94.	0.1	55
44	The influence of thermochemical convection on the fixity of mantle plumes. Earth and Planetary Science Letters, 2004, 222, 485-500.	4.4	51
45	The anisotropic and rheological structure of the oceanic upper mantle from a simple model of plate shear. Geophysical Journal International, 2004, 158, 287-296.	2.4	50
46	Degree-one mantle convection: Dependence on internal heating and temperature-dependent rheology. Geophysical Research Letters, 2005, 32, .	4.0	49
47	Predicting and testing continental vertical motion histories since the Paleozoic. Earth and Planetary Science Letters, 2012, 317-318, 426-435.	4.4	48
48	Core evolution driven by mantle global circulation. Physics of the Earth and Planetary Interiors, 2015, 243, 44-55.	1.9	48
49	Effects of lithosphere on the long-wavelength gravity anomalies and their implications for the formation of the Tharsis rise on Mars. Journal of Geophysical Research, 2002, 107, 8-1.	3.3	46
50	Supercontinent formation from stochastic collision and mantle convection models. Gondwana Research, 2009, 15, 267-275.	6.0	46
51	Plume-induced topography and geoid anomalies and their implications for the Tharsis rise on Mars. Journal of Geophysical Research, 2004, 109, .	3.3	45
52	Dynamics of thermal plumes in three-dimensional isoviscous thermal convection. Geophysical Journal International, 2005, 162, 289-300.	2.4	45
53	The effect of shearing on the onset and vigor of small-scale convection in a Newtonian rheology. Geophysical Research Letters, 2003, 30, .	4.0	44
54	Viscous heating, adiabatic heating and energetic consistency in compressible mantle convection. Geophysical Journal International, 2008, 173, 693-702.	2.4	43

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55	Epeirogeny or eustasy? Paleozoicâ€“Mesozoic vertical motion of the North American continental interior from thermochronometry and implications for mantle dynamics. Earth and Planetary Science Letters, 2012, 317-318, 436-445.	4.4	42
56	Constraining mantle viscosity structure for a thermochemical mantle using the geoid observation. Geochemistry, Geophysics, Geosystems, 2016, 17, 895-913.	2.5	41
57	Dynamics of crustal compensation and its influences on crustal isostasy. Journal of Geophysical Research, 1997, 102, 15287-15299.	3.3	39
58	Martian crustal dichotomy and Tharsis formation by partial melting coupled to early plume migration. Journal of Geophysical Research, 2012, 117, .	3.3	38
59	Constraints of the topography, gravity and volcanism on Venusian mantle dynamics and generation of plate tectonics. Earth and Planetary Science Letters, 2013, 362, 207-214.	4.4	38
60	History and dynamics of net rotation of the mantle and lithosphere. Geochemistry, Geophysics, Geosystems, 2014, 15, 3645-3657.	2.5	38
61	On the temporal evolution of longâ€wavelength mantle structure of the <scp>E</scp>arth since the early <scp>P</scp>aleozoic. Geochemistry, Geophysics, Geosystems, 2015, 16, 1599-1615.	2.5	38
62	The source location of mantle plumes from 3D spherical models of mantle convection. Earth and Planetary Science Letters, 2017, 478, 47-57.	4.4	38
63	Convective instability in ice I with non-Newtonian rheology: Application to the icy Galilean satellites. Journal of Geophysical Research, 2004, 109, .	3.3	37
64	Accurate determination of surface normal stress in viscous flow from a consistent boundary flux method. Physics of the Earth and Planetary Interiors, 1993, 78, 1-8.	1.9	33
65	Bathymetry of the Pacific plate and its implications for thermal evolution of lithosphere and mantle dynamics. Journal of Geophysical Research, 2007, 112, .	3.3	32
66	Surface versus internal loading of the Tharsis rise, Mars. Journal of Geophysical Research, 2003, 108, .	3.3	31
67	Linking lowermost mantle structure, core-mantle boundary heat flux and mantle plume formation. Physics of the Earth and Planetary Interiors, 2018, 277, 10-29.	1.9	30
68	Timescale and morphology of Martian mantle overturn immediately following magma ocean solidification. Journal of Geophysical Research E: Planets, 2014, 119, 454-467.	3.6	29
69	The long-wavelength mantle structure and dynamics and implications for large-scale tectonics and volcanism in the Phanerozoic. Gondwana Research, 2016, 29, 83-104.	6.0	28
70	Longâ€wavelength stagnant lid convection with hemispheric variation in lithospheric thickness: Link between Martian crustal dichotomy and Tharsis?. Journal of Geophysical Research, 2010, 115, .	3.3	26
71	The cause for the northâ€“south orientation of the crustal dichotomy and the equatorial location of Tharsis on Mars. Icarus, 2007, 190, 24-31.	2.5	24
72	Correlation of deep moonquakes and mare basalts: Implications for lunar mantle structure and evolution. Icarus, 2012, 220, 100-105.	2.5	24

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73	Constraints on upper mantle viscosity from the flowâ€induced pressure gradient across the Australian continental keel. Geochemistry, Geophysics, Geosystems, 2010, 11, .	2.5	23
74	Implementation and application of adaptive mesh refinement for thermochemical mantle convection studies. Geochemistry, Geophysics, Geosystems, 2011, 12, .	2.5	23
75	Can tidal tomography be used to unravel the longâ€wavelength structure of the lunar interior?. Geophysical Research Letters, 2012, 39, .	4.0	21
76	Modeling the Inception of Supercontinent Breakup: Stress State and the Importance of Orogens. Geochemistry, Geophysics, Geosystems, 2019, 20, 4830-4848.	2.5	21
77	The longâ€wavelength geoid from threeâ€dimensional spherical models of thermal and thermochemical mantle convection. Journal of Geophysical Research: Solid Earth, 2015, 120, 4572-4596.	3.4	20
78	Constraints on viscous dissipation of plate bending from compressible mantle convection. Earth and Planetary Science Letters, 2010, 297, 154-164.	4.4	19
79	Quantifying melt production and degassing rate at midâ€ocean ridges from global mantle convection models with plate motion history. Geochemistry, Geophysics, Geosystems, 2016, 17, 2884-2904.	2.5	19
80	Constraints on the formation of the Martian crustal dichotomy from remnant crustal magnetism. Physics of the Earth and Planetary Interiors, 2012, 212-213, 55-63.	1.9	18
81	Constraints on the Rheology of the Lithosphere From Flexure of the Pacific Plate at the Hawaiian Islands. Geochemistry, Geophysics, Geosystems, 2020, 21, e2019GC008819.	2.5	15
82	Constraints on Mantle Viscosity From Intermediateâ€Wavelength Geoid Anomalies in Mantle Convection Models With Plate Motion History. Journal of Geophysical Research: Solid Earth, 2021, 126, e2020JB021561.	3.4	14
83	A perturbation method and its application: elastic tidal response of a laterally heterogeneous planet. Geophysical Journal International, 2014, 199, 631-647.	2.4	13
84	Formation of the Lunar Fossil Bulges and Its Implication for the Early Earth and Moon. Geophysical Research Letters, 2018, 45, 1286-1296.	4.0	13
85	Episodic and multistaged gravitational instability of cratonic lithosphere and its implications for reactivation of the North China Craton. Geochemistry, Geophysics, Geosystems, 2015, 16, 815-833.	2.5	11
86	Lateral Motion of Mantle Plumes in 3â€D Geodynamic Models. Geophysical Research Letters, 2019, 46, 4685-4693.	4.0	11
87	Does quadrupole stability imply LLSVP fixity?. Nature, 2013, 503, E3-E4.	27.8	10
88	Controls on Global Mantle Convective Structures and Their Comparison With Seismic Models. Journal of Geophysical Research: Solid Earth, 2019, 124, 9345-9372.	3.4	10
89	More constraints on internal heating rate of the Earth's mantle from plume observations. Geophysical Research Letters, 2009, 36, .	4.0	9
90	The effects of non-Newtonian rheology in the upper mantle on relative sea level change and geodetic observables induced by glacial isostatic adjustment process. Geophysical Journal International, 2021, 228, 1887-1906.	2.4	9

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91	Dynamic weakening with grain-damage and implications for slab detachment. Physics of the Earth and Planetary Interiors, 2018, 285, 76-90.	1.9	8
92	Heat flux and topography constraints on thermochemical structure below North China Craton regions and implications for evolution of cratonic lithosphere. Journal of Geophysical Research: Solid Earth, 2016, 121, 3081-3098.	3.4	6
93	Seismic Strain Rate and Flexure at the Hawaiian Islands Constrain the Frictional Coefficient. Geochemistry, Geophysics, Geosystems, 2021, 22, e2020GC009547.	2.5	5
94	Reconciling lithospheric rheology between laboratory experiments, field observations and different tectonic settings. Geophysical Journal International, 2021, 228, 857-875.	2.4	5
95	Elastic tidal response of a laterally heterogeneous planet: a complete perturbation formulation. Geophysical Journal International, 2016, 207, 89-110.	2.4	4
96	Effects of a Weak Lower Crust on the Flexure of Continental Lithosphere. Journal of Geophysical Research: Solid Earth, 2021, 126, e2021JB022678.	3.4	3
97	Formation of Horizontally Deflected Slabs in the Mantle Transition Zone Caused by Spinelâ€toâ€Postâ€Spinel Phase Transition, Its Associated Grainsize Reduction Effects, and Trench Retreat. Geophysical Research Letters, 2021, 48, e2021GL093679.	4.0	2
98	CitcomSVE: A Threeâ€dimensional Finite Element Software Package for Modeling Planetary Mantleâ€™s Viscoelastic Deformation in Response to Surface and Tidal Loads. Geochemistry, Geophysics, Geosystems, 0, , .	2.5	1
99	The Long-Wavelength Mantle Structure, and the supercontinent Evolution since the Paleozoic. Acta Geologica Sinica, 2016, 90, 49-49.	1.4	0