Frederic Deschamps

List of Publications by Year
in descending order

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71 papers	2,815 citations	212478 28 h-index	198040 52 g-index
72 all docs	72 docs citations	72 times ranked	2267 citing authors

#	Article	IF	Citations
1	The tidalâ€“thermal evolution of the Plutoâ€“Charon system. Icarus, 2022, 376, 114871.	1.1	5
2	Influence of composition-dependent thermal conductivity on the long-term evolution of primordial reservoirs in Earth's lower mantle. Earth, Planets and Space, 2022, 74, .	0.9	3
3	Constraints on the composition and temperature of LLSVPs from seismic properties of lower mantle minerals. Earth and Planetary Science Letters, 2021, 554, 116685.	1.8	7
4	Heatâ€Blanketed Convection and its Implications for the Continental Lithosphere. Journal of Geophysical Research: Solid Earth, 2021, 126, e2020JB020695.	1.4	1
5	Seismic Attenuation and Sâ€Velocity Structures in Beneath Central America Using 1â€D Fullâ€Waveform Inversion. Journal of Geophysical Research: Solid Earth, 2021, 126, e2020JB021356.	1.4	1
6	Scaling Laws for Mixedâ€Heated Stagnantâ€Lid Convection and Application to Europa. Journal of Geophysical Research E: Planets, 2021, 126, e2021JE006963.	1.5	1
7	Stagnant lid convection with temperature-dependent thermal conductivity and the thermal evolution of icy worlds. Geophysical Journal International, 2020, 224, 1870-1889.	1.0	4
8	Tidally Heated Convection and the Occurrence of Melting in Icy Satellites: Application to Europa. Journal of Geophysical Research E: Planets, 2020, 125, e2019JE006248.	1.5	31
9	From Cosmic Explosions to Terrestrial Fires? A Discussion. Journal of Geology, 2020, 128, 389-391.	0.7	1
10	Low thermal conductivity of iron-silicon alloys at Earthâ€™s core conditions with implications for the geodynamo. Nature Communications, 2020, 11, 3332.	5.8	39
11	Spin Transition of Iron in Î´â€(Al,Fe)OOH Induces Thermal Anomalies in Earth's Lower Mantle. Geophysical Research Letters, 2020, 47, e2020GL087036.	1.5	22
12	Threeâ€dimensional Elastic and Anelastic Structure of the Lowermost Mantle Beneath the Western Pacific From Finiteâ€Frequency Tomography. Journal of Geophysical Research: Solid Earth, 2020, 125, e2019JB018089.	1.4	5
13	Effects of the Compositional Viscosity Ratio on the Longâ€Term Evolution of Thermochemical Reservoirs in the Deep Mantle. Geophysical Research Letters, 2019, 46, 9591-9601.	1.5	11
14	Coreâ€Mantle Boundary Dynamic Topography: Influence of Postperovskite Viscosity. Journal of Geophysical Research: Solid Earth, 2019, 124, 9247-9264.	1.4	9
15	Investigating the seismic structure and visibility of dynamic plume models with seismic array methods. Geophysical Journal International, 2019, 219, S167-S194.	1.0	9
16	Radial thermo-chemical structure beneath Western and Northern Pacific from seismic waveform inversion. Earth and Planetary Science Letters, 2019, 520, 153-163.	1.8	22
17	Lowermost mantle thermal conductivity constrained from experimental data and tomographic models. Geophysical Journal International, 2019, 219, S115-S136.	1.0	16
18	Effects of iron on the lattice thermal conductivity of Earthâ€™s deep mantle and implications for mantle dynamics. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 4099-4104.	3.3	57

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19	Temperature and heat flux scaling laws for isoviscous, infinite Prandtl number mixed heating convection. Geophysical Journal International, 2018, 214, 265-281.	1.0	11
20	Constraints on coreâ€“mantle boundary topography from models of thermal and thermochemical convection. Geophysical Journal International, 2018, 212, 164-188.	1.0	23
21	The Influence of Curvature on Convection in a Temperatureâ€Dependent Viscosity Fluid: Implications for the 2â€D and 3â€D Modeling of Moons. Journal of Geophysical Research E: Planets, 2018, 123, 1863-1880.	1.5	18
22	Effects of Iron Spin Transition on the Structure and Stability of Large Primordial Reservoirs in Earth's Lower Mantle. Geophysical Research Letters, 2018, 45, 5918-5928.	1.5	5
23	Surviving mantle convection. Nature Geoscience, 2017, 10, 161-161.	5.4	1
24	Elastic and anelastic structure of the lowermost mantle beneath the Western Pacific from waveform inversion. Geophysical Journal International, 2017, 208, 1290-1304.	1.0	10
25	Reduced lattice thermal conductivity of Feâ€bearing bridgmanite in Earth's deep mantle. Journal of Geophysical Research: Solid Earth, 2017, 122, 4900-4917.	1.4	53
26	Thermal convection as a possible mechanism for the origin of polygonal structures on Pluto's surface. Journal of Geophysical Research E: Planets, 2017, 122, 1056-1076.	1.5	8
27	Constraints on Super-Earth Interiors from Stellar Abundances. Astrophysical Journal, 2017, 850, 93.	1.6	72
28	Small postâ€perovskite patches at the base of lower mantle primordial reservoirs: Insights from 2â€D numerical modeling and implications for ULVZs. Geophysical Research Letters, 2016, 43, 3215-3225.	1.5	11
29	Layered anisotropy within the crust and lithospheric mantle beneath the Sea of Japan. Journal of Asian Earth Sciences, 2016, 128, 181-195.	1.0	13
30	Electrical conductivity as a constraint on lower mantle thermo-chemical structure. Earth and Planetary Science Letters, 2016, 450, 108-119.	1.8	12
31	Rayleigh-wave dispersion reveals crust-mantle decoupling beneath eastern Tibet. Scientific Reports, 2015, 5, 16644.	1.6	39
32	Towards more realistic core-mantle boundary heat flux patterns: a source of diversity in planetary dynamos. Progress in Earth and Planetary Science, 2015, 2, .	1.1	16
33	Thermal conductivity of H₂Oâ€CH₃OH mixtures at high pressures: Implications for the dynamics of icy superâ€Earths outer shells. Journal of Geophysical Research E: Planets, 2015, 120, 1697-1707.	1.5	5
34	Large-Scale Thermo-chemical Structure of the Deep Mantle: Observations and Models. , 2015, , 479-515.		19
35	Lower Mantle Electrical Conductivity Inferred from Probabilistic Tomography. Terrestrial, Atmospheric and Oceanic Sciences, 2015, 26, 27.	0.3	5
36	Numerical dynamos with outer boundary heat flux inferred from probabilistic tomographyâ€”consequences for latitudinal distribution of magnetic flux. Geophysical Journal International, 2015, 203, 840-855.	1.0	13

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37	Effects of the post-perovskite phase transition properties on the stability and structure of primordial reservoirs in the lower mantle of the Earth. Earth and Planetary Science Letters, 2015, 432, 1-12.	1.8	27
38	The stability and structure of primordial reservoirs in the lower mantle: insights from models of thermochemical convection in three-dimensional spherical geometry. Geophysical Journal International, 2014, 199, 914-930.	1.0	59
39	Mantle plume chemical diversity. Nature Geoscience, 2014, 7, 330-331.	5.4	2
40	Stagnant lid convection in 3D-Cartesian geometry: Scaling laws and applications to icy moons and dwarf planets. Physics of the Earth and Planetary Interiors, 2014, 229, 40-54.	0.7	15
41	Anisotropic Rayleigh wave phase velocity maps of eastern China. Journal of Geophysical Research: Solid Earth, 2014, 119, 4802-4820.	1.4	32
42	Effects of lowâ€viscosity postâ€perovskite on the stability and structure of primordial reservoirs in the lower mantle. Geophysical Research Letters, 2014, 41, 7089-7097.	1.5	23
43	Stagnant lid convection in bottom-heated thin 3-D spherical shells: Influence of curvature and implications for dwarf planets and icy moons. Journal of Geophysical Research E: Planets, 2014, 119, 1895-1913.	1.5	27
44	Upper mantle compositional variations and discontinuity topography imaged beneath Australia from Bayesian inversion of surfaceâ€wave phase velocities and thermochemical modeling. Journal of Geophysical Research: Solid Earth, 2013, 118, 5285-5306.	1.4	33
45	The primitive nature of large low shear-wave velocity provinces. Earth and Planetary Science Letters, 2012, 349-350, 198-208.	1.8	103
46	Radial 1â€D seismic structures in the deep mantle in mantle convection simulations with selfâ€consistently calculated mineralogy. Geochemistry, Geophysics, Geosystems, 2012, 13, .	1.0	21
47	High Rayleigh number thermal convection in volumetrically heated spherical shells. Journal of Geophysical Research, 2012, 117, .	3.3	21
48	The thermo-chemical and physical structure beneath the North American continent from Bayesian inversion of surface-wave phase velocities. Journal of Geophysical Research, 2011, 116, .	3.3	28
49	A deep mantle origin for the primitive signature of ocean island basalt. Nature Geoscience, 2011, 4, 879-882.	5.4	75
50	THE ROLE OF METHANOL IN THE CRYSTALLIZATION OF TITAN'S PRIMORDIAL OCEAN. Astrophysical Journal, 2010, 724, 887-894.	1.6	23
51	Temperature and heat flux scalings for isoviscous thermal convection in spherical geometry. Geophysical Journal International, 2010, , no-no.	1.0	22
52	The influence of MORB and harzburgite composition on thermo-chemical mantle convection in a 3-D spherical shell with self-consistently calculated mineral physics. Earth and Planetary Science Letters, 2010, 296, 403-412.	1.8	117
53	Layered azimuthal anisotropy of Rayleigh wave phase velocities in the European Alpine lithosphere inferred from ambient noise. Earth and Planetary Science Letters, 2010, 297, 95-102.	1.8	99
54	Searching for models of thermo-chemical convection that explain probabilistic tomography. IIâ€"Influence of physical and compositional parameters. Physics of the Earth and Planetary Interiors, 2009, 176, 1-18.	0.7	73

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55	Inferring radial models of mantle viscosity from gravity (GRACE) data and an evolutionary algorithm. Physics of the Earth and Planetary Interiors, 2009, 176, 19-32.	0.7	27
56	Incorporating selfâ€consistently calculated mineral physics into thermochemical mantle convection simulations in a 3â€D spherical shell and its influence on seismic anomalies in Earth's mantle. Geochemistry, Geophysics, Geosystems, 2009, 10, .	1.0	76
57	Azimuthal anisotropy of Rayleigh-wave phase velocities in the east-central United States. Geophysical Journal International, 2008, 173, 827-843.	1.0	79
58	Searching for models of thermo-chemical convection that explain probabilistic tomography. Physics of the Earth and Planetary Interiors, 2008, 171, 357-373.	0.7	69
59	Stratified seismic anisotropy reveals past and present deformation beneath the East-central United States. Earth and Planetary Science Letters, 2008, 274, 489-498.	1.8	57
60	A new finiteâ€frequency shearâ€velocity model of the Europeanâ€Mediterranean region. Geophysical Research Letters, 2008, 35, .	1.5	18
61	Thermo-Chemical Structure of the Lower Mantle: Seismological Evidence and Consequences for Geodynamics. , 2007, , 293-320.		16
62	Probabilistic Tomography Maps Chemical Heterogeneities Throughout the Lower Mantle. Science, 2004, 306, 853-856.	6.0	435
63	Thermal and compositional anomalies beneath the North American continent. Journal of Geophysical Research, 2004, 109, .	3.3	66
64	Geophysical evidence for chemical variations in the Australian Continental Mantle. Geophysical Research Letters, 2004, 31, n/a-n/a.	1.5	25
65	Towards a lower mantle reference temperature and composition. Earth and Planetary Science Letters, 2004, 222, 161-175.	1.8	72
66	Mantle tomography and its relation to temperature and composition. Physics of the Earth and Planetary Interiors, 2003, 140, 277-291.	0.7	93
67	Anomalies of temperature and iron in the uppermost mantle inferred from gravity data and tomographic models. Physics of the Earth and Planetary Interiors, 2002, 129, 245-264.	0.7	71
68	Thermal convection in the outer shell of large icy satellites. Journal of Geophysical Research, 2001, 106, 5107-5121.	3.3	81
69	The relative density-to-shear velocity scaling in the uppermost mantle. Physics of the Earth and Planetary Interiors, 2001, 124, 193-212.	0.7	41
70	Inversion of two-dimensional numerical convection experiments for a fluid with a strongly temperature-dependent viscosity. Geophysical Journal International, 2000, 143, 204-218.	1.0	51
71	On the internal structure and dynamics of Titan. Planetary and Space Science, 2000, 48, 617-636.	0.9	160