

Mathilde Cannat

List of Publications by Year in descending order

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82
papers

5,568
citations

87888

38
h-index

79698

73
g-index

93
all docs

93
docs citations

93
times ranked

2647
citing authors

#	ARTICLE	IF	CITATIONS
1	Emplacement of mantle rocks in the seafloor at mid-ocean ridges. <i>Journal of Geophysical Research</i> , 1993, 98, 4163-4172.	3.3	437
2	Modes of seafloor generation at a melt-poor ultraslow-spreading ridge. <i>Geology</i> , 2006, 34, 605.	4.4	337
3	Thin crust, ultramafic exposures, and rugged faulting patterns at the Mid-Atlantic Ridge (22°-24°N). <i>Geology</i> , 1995, 23, 49.	4.4	324
4	How thick is the magmatic crust at slow spreading oceanic ridges?. <i>Journal of Geophysical Research</i> , 1996, 101, 2847-2857.	3.3	268
5	Discovery of a magma chamber and faults beneath a Mid-Atlantic Ridge hydrothermal field. <i>Nature</i> , 2006, 442, 1029-1032.	27.8	248
6	Continuous exhumation of mantle-derived rocks at the Southwest Indian Ridge for 11 million years. <i>Nature Geoscience</i> , 2013, 6, 314-320.	12.9	224
7	Mid-Atlantic Ridge-Azores hotspot interactions: along-axis migration of a hotspot-derived event of enhanced magmatism 10 to 4 Ma ago. <i>Earth and Planetary Science Letters</i> , 1999, 173, 257-269.	4.4	190
8	Magnetic properties of variably serpentinized abyssal peridotites. <i>Journal of Geophysical Research</i> , 2002, 107, EPM 3-1.	3.3	186
9	Serpentinized peridotites and gabbros in the Mid-Atlantic Ridge axial valley at 15°37'N and 16°52'N. <i>Earth and Planetary Science Letters</i> , 1992, 109, 87-106.	4.4	173
10	Formation of the axial relief at the very slow spreading Southwest Indian Ridge (49° to 69°E). <i>Journal of Geophysical Research</i> , 1999, 104, 22825-22843.	3.3	169
11	Ultramafic and gabbroic exposures at the Mid-Atlantic Ridge: geological mapping in the 15°N region. <i>Tectonophysics</i> , 1997, 279, 193-213.	2.2	166
12	Evidence for major-element heterogeneity in the mantle source of abyssal peridotites from the Southwest Indian Ridge (52° to 68°E). <i>Geochemistry, Geophysics, Geosystems</i> , 2003, 4, .	2.5	133
13	Emplacement of deep crustal and mantle rocks on the west median valley wall of the MARK area (MAR). <i>Tectonophysics</i> , 2001, 331, 1-12.	2.2	126
14	Spreading rate, spreading obliquity, and melt supply at the ultraslow spreading Southwest Indian Ridge. <i>Geochemistry, Geophysics, Geosystems</i> , 2008, 9, .	2.5	113
15	Spatial and temporal distribution of seismicity along the northern Mid-Atlantic Ridge (15°-35°N). <i>Journal of Geophysical Research</i> , 2003, 108, .	3.3	99
16	Melt supply variations to a magma-poor ultra-slow spreading ridge (Southwest Indian Ridge 61° to 69°E). <i>Journal of Geophysical Research</i> , 2000, 105, 10, 19, 19, 19.	2.5	95
17	Tectonic structure, evolution, and the nature of oceanic core complexes and their detachment fault zones (13°20'N and 13°30'N, Mid Atlantic Ridge). <i>Geochemistry, Geophysics, Geosystems</i> , 2017, 18, 1451-1482.	2.5	94
18	Ultramafic exposures and the gravity signature of the lithosphere near the Fifteen-Twenty Fracture Zone (Mid-Atlantic Ridge, 14°-16.5°N). <i>Earth and Planetary Science Letters</i> , 1999, 171, 411-424.	4.4	90

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19	Crustal thickness of V-shaped ridges south of the Azores: Interaction of the Mid-Atlantic Ridge (36°-39°N) and the Azores hot spot. <i>Journal of Geophysical Research</i> , 2001, 106, 21719-21735.	3.3	90
20	Propagation of a melting anomaly along the ultraslow Southwest Indian Ridge between 46°E and 52°20'E: interaction with the Crozet hotspot?. <i>Geophysical Journal International</i> , 2009, 179, 687-699.	2.4	90
21	Serpentinization and associated hydrogen and methane fluxes at slow spreading ridges. <i>Geophysical Monograph Series</i> , 2010, , 241-264.	0.1	83
22	On spreading modes and magma supply at slow and ultraslow mid-ocean ridges. <i>Earth and Planetary Science Letters</i> , 2019, 519, 223-233.	4.4	72
23	Structure, temporal evolution, and heat flux estimates from the Lucky Strike deep-sea hydrothermal field derived from seafloor image mosaics. <i>Geochemistry, Geophysics, Geosystems</i> , 2012, 13, .	2.5	71
24	Serpentinization and Fluid Pathways in Tectonically Exhumed Peridotites from the Southwest Indian Ridge (62-65°E). <i>Journal of Petrology</i> , 2015, 56, 703-734.	2.8	70
25	Temporal variability and tidal modulation of hydrothermal exit fluid temperatures at the Lucky Strike deep-sea vent field, Mid-Atlantic Ridge. <i>Journal of Geophysical Research: Solid Earth</i> , 2014, 119, 2543-2566.	3.4	69
26	Serpentinization of mantle-derived peridotites at mid-ocean ridges: Mesh texture development in the context of tectonic exhumation. <i>Geochemistry, Geophysics, Geosystems</i> , 2014, 15, 2354-2379.	2.5	65
27	Three-dimensional seismic structure of the Dragon Flag oceanic core complex at the ultraslow spreading Southwest Indian Ridge (49°39'E). <i>Geochemistry, Geophysics, Geosystems</i> , 2013, 14, 4544-4563.	2.5	64
28	Assessing the conditions of continental breakup at magma-poor rifted margins: What can we learn from slow spreading mid-ocean ridges?. <i>Comptes Rendus - Geoscience</i> , 2009, 341, 406-427.	1.2	63
29	Recent volcanic events and the distribution of hydrothermal venting at the Lucky Strike hydrothermal field, Mid-Atlantic Ridge. <i>Geochemistry, Geophysics, Geosystems</i> , 2009, 10, .	2.5	62
30	FUJI Dome: A large detachment fault near 64°E on the very slow-spreading southwest Indian Ridge. <i>Geochemistry, Geophysics, Geosystems</i> , 2003, 4, .	2.5	60
31	Oceanic corrugated surfaces and the strength of the axial lithosphere at slow spreading ridges. <i>Earth and Planetary Science Letters</i> , 2009, 288, 174-183.	4.4	59
32	Magmatism, serpentinization and life: Insights through drilling the Atlantis Massif (IODP Expedition) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 5	1.4	58
33	An Ultramafic Lift at the Mid-Atlantic Ridge: Successive Stages of Magmatism in Serpentinized Peridotites from the 15°N Region. <i>Petrology and Structural Geology</i> , 1995, , 5-34.	0.5	57
34	Tectonic and magmatic segmentation of the Global Ocean Ridge System: a synthesis of observations. <i>Geological Society Special Publication</i> , 2016, 420, 249-295.	1.3	51
35	The ultraslow spreading Southwest Indian Ridge. <i>Geophysical Monograph Series</i> , 2010, , 153-173.	0.1	48
36	Quantifying diffuse and discrete venting at the Tour Eiffel vent site, Lucky Strike hydrothermal field. <i>Geochemistry, Geophysics, Geosystems</i> , 2012, 13, .	2.5	47

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37	Transform fault effect on mantle melting in the MARK area (Mid-Atlantic Ridge south of the Kane Tj ETQq1 1 0.784314 rgBT /Overloc	4.4	44
38	Stretching of the deep crust at the slow-spreading Southwest Indian Ridge. <i>Tectonophysics</i> , 1991, 190, 73-94.	2.2	42
39	Deformation associated with the denudation of mantle-derived rocks at the Mid-Atlantic Ridge 13°-15°N: The role of magmatic injections and hydrothermal alteration. <i>Geochemistry, Geophysics, Geosystems</i> , 2012, 13, .	2.5	38
40	Crustal velocity structure of the Lucky Strike segment of the Mid-Atlantic Ridge at 37°N from seismic refraction measurements. <i>Journal of Geophysical Research</i> , 2010, 115, .	3.3	37
41	High-resolution bathymetry reveals contrasting landslide activity shaping the walls of the Mid-Atlantic Ridge axial valley. <i>Geochemistry, Geophysics, Geosystems</i> , 2013, 14, 996-1011.	2.5	37
42	Effect of melt/mantle interactions on MORB chemistry at the easternmost Southwest Indian Ridge (61°-67°E). <i>Geochemistry, Geophysics, Geosystems</i> , 2016, 17, 4605-4640.	2.5	36
43	Magnetization of ~26.5 Ma seafloor at the ultraslow spreading Southwest Indian Ridge, 61°-67°E. <i>Geochemistry, Geophysics, Geosystems</i> , 2008, 9, .	2.5	33
44	Hydrothermal activity along the slow-spreading Lucky Strike ridge segment (Mid-Atlantic Ridge): Distribution, heatflux, and geological controls. <i>Earth and Planetary Science Letters</i> , 2015, 431, 173-185.	4.4	32
45	How do detachment faults form at ultraslow mid-ocean ridges in a thick axial lithosphere?. <i>Earth and Planetary Science Letters</i> , 2020, 533, 116048.	4.4	32
46	Some Hard Rock Constraints on the Supply of Heat to Mid-Ocean Ridges. <i>Geophysical Monograph Series</i> , 0, , 111-149.	0.1	31
47	Atypically depleted upper mantle component revealed by Hf isotopes at Lucky Strike segment. <i>Chemical Geology</i> , 2013, 341, 128-139.	3.3	29
48	Geological context and vents morphology of the ultramafic-hosted Ashadze hydrothermal areas (Mid-Atlantic Ridge 13°N). <i>Geochemistry, Geophysics, Geosystems</i> , 2012, 13, .	2.5	28
49	MoMAR-D: a technological challenge to monitor the dynamics of the Lucky Strike vent ecosystem. <i>ICES Journal of Marine Science</i> , 2011, 68, 416-424.	2.5	27
50	Hydrothermal seismicity beneath the summit of Lucky Strike volcano, Mid-Atlantic Ridge. <i>Earth and Planetary Science Letters</i> , 2013, 373, 118-128.	4.4	27
51	From slow to ultra-slow: How does spreading rate affect seafloor roughness and crustal thickness?. <i>Geology</i> , 2011, 39, 911-914.	4.4	26
52	Hydrothermally-induced melt lens cooling and segmentation along the axis of fast- and intermediate-spreading centers. <i>Geophysical Research Letters</i> , 2011, 38, n/a-n/a.	4.0	25
53	Intraplate Deformation of Oceanic Crust in the West Somali Basin: Insights From Long-Offset Reflection Seismic Data. <i>Tectonics</i> , 2018, 37, 588-603.	2.8	25
54	Parallel bands of seismicity at the Mid-Atlantic Ridge, 12-14°N. <i>Geophysical Research Letters</i> , 2003, 30, .	4.0	23

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55	Deformation associated to exhumation of serpentinized mantle rocks in a fossil Ocean Continent Transition: The Totalp unit in SE Switzerland. <i>Lithos</i> , 2013, 175-176, 255-271.	1.4	23
56	Three-dimensional geometry of axial magma chamber roof and faults at Lucky Strike volcano on the Mid-Atlantic Ridge. <i>Journal of Geophysical Research: Solid Earth</i> , 2015, 120, 5379-5400.	3.4	23
57	Quasi-3D Seismic Reflection Imaging and Wide-Angle Velocity Structure of Nearly Amagmatic Oceanic Lithosphere at the Ultraslow Spreading Southwest Indian Ridge. <i>Journal of Geophysical Research: Solid Earth</i> , 2017, 122, 9511-9533.	3.4	23
58	Lucky Strike seamount: Implications for the emplacement and rifting of segment-centered volcanoes at slow spreading mid-ocean ridges. <i>Geochemistry, Geophysics, Geosystems</i> , 2014, 15, 4157-4179.	2.5	22
59	Seismological constraints on the thermal structure along the Lucky Strike segment (Mid-Atlantic) Tj ETQq1 1 0.784314 rgBT /Overloc Geophysical Researches, 2009, 30, 105-120.	1.2	20
60	Spatial Variations in Vent Chemistry at the Lucky Strike Hydrothermal Field, Mid-Atlantic Ridge (37°N): Updates for Subseafloor Flow Geometry From the Newly Discovered Capelinhos Vent. <i>Geochemistry, Geophysics, Geosystems</i> , 2018, 19, 4444-4458.	2.5	20
61	Sulfate minerals control dissolved rare earth element flux and Nd isotope signature of buoyant hydrothermal plume (EMSO-Azores, 37°N Mid-Atlantic Ridge). <i>Chemical Geology</i> , 2018, 499, 111-125.	3.3	20
62	Magnetic signature of large exhumed mantle domains of the Southwest Indian Ridge " results from a deep-tow geophysical survey over 0 to 11 Ma old seafloor. <i>Solid Earth</i> , 2014, 5, 339-354.	2.8	19
63	Evidence for magma entrapment below oceanic crust from deep seismic reflections in the Western Somali Basin. <i>Geology</i> , 2016, 44, 407-410.	4.4	19
64	Peridotite-gabbro-trondhjemite association of the Mid-Atlantic Ridge between 12°58' and 14°45'N: Ashadze and Logachev hydrothermal vent fields. <i>Geochemistry International</i> , 2011, 49, 323-354.	0.7	18
65	780 Thousand Years of Upper-Crustal Construction at a Melt-Rich Segment of the Ultraslow Spreading Southwest Indian Ridge 50°28'E. <i>Journal of Geophysical Research: Solid Earth</i> , 2021, 126, e2021JB022152.	3.4	17
66	Along-axis hydrothermal flow at the axis of slow spreading Mid-Ocean Ridges: Insights from numerical models of the Lucky Strike vent field (MAR). <i>Geochemistry, Geophysics, Geosystems</i> , 2014, 15, 2918-2931.	2.5	15
67	Strain Localization in the Root of Detachment Faults at a Melt-Starved Mid-Ocean Ridge: A Microstructural Study of Abyssal Peridotites From the Southwest Indian Ridge. <i>Geochemistry, Geophysics, Geosystems</i> , 2021, 22, e2020GC009434.	2.5	14
68	Oceanic basement roughness alongside magma-poor rifted margins: insight into initial seafloor spreading. <i>Geophysical Journal International</i> , 2018, 212, 900-915.	2.4	12
69	Can high-temperature, high-heat flux hydrothermal vent fields be explained by thermal convection in the lower crust along fast-spreading ocean ridges?. <i>Geochemistry, Geophysics, Geosystems</i> , 2017, 18, 1907-1925.	2.5	11
70	Seismic Velocity Structure Along and Across the Ultraslow Spreading Southwest Indian Ridge at 64°30'E Showcases Flipping Detachment Faults. <i>Journal of Geophysical Research: Solid Earth</i> , 2021, 126, e2021JB022177.	3.4	9
71	Geochemistry of serpentinized and multiphase altered Atlantis Massif peridotites (IODP Expedition) Tj ETQq1 1 0.784314 rgBT /Overloc 594, 120681.	3.3	9
72	Internal Structure of the Oceanic Lithosphere at a Melt-Starved Ultraslow Spreading Mid-Ocean Ridge: Insights From 2D Seismic Data. <i>Geochemistry, Geophysics, Geosystems</i> , 2020, 21, e2019GC008540.	2.5	8

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73	Thermo-Mechanical State of Ultraslow Spreading Ridges With a Transient Magma Supply. <i>Journal of Geophysical Research: Solid Earth</i> , 2021, 126, e2020JB020557.	3.4	7
74	Margin-to-Margin Seafloor Spreading in the Eastern Gulf of Aden: A 16 Ma-Long History of Deformation and Magmatism from Seismic Reflection, Gravity and Magnetic Data. <i>Frontiers in Earth Science</i> , 2021, 9, .	1.8	6
75	Tectonic termination of oceanic detachment faults, with constraints on tectonic uplift and mass wasting related erosion rates. <i>Earth and Planetary Science Letters</i> , 2022, 584, 117449.	4.4	5
76	Thermal Regime of Slow and Ultraslow Spreading Ridges Controlled by Melt Supply and Modes of Emplacement. <i>Journal of Geophysical Research: Solid Earth</i> , 2022, 127, .	3.4	5
77	Integrating Multidisciplinary Observations in Vent Environments (IMOVE): Decadal Progress in Deep-Sea Observatories at Hydrothermal Vents. <i>Frontiers in Marine Science</i> , 2022, 9, .	2.5	5
78	Age and Rate of Accumulation of Metal-Rich Hydrothermal Deposits on the Seafloor: The Lucky Strike Vent Field, Mid-Atlantic Ridge. <i>Journal of Geophysical Research: Solid Earth</i> , 2022, 127, .	3.4	4
79	Effects of Substrate Composition and Subsurface Fluid Pathways on the Geochemistry of Seafloor Hydrothermal Deposits at the Lucky Strike Vent Field, Mid-Atlantic Ridge. <i>Geochemistry, Geophysics, Geosystems</i> , 2022, 23, .	2.5	3
80	The isotopic (He, Ne, Sr, Nd, Hf, Pb) signature in the Indian Mantle over 8.8 Ma. <i>Chemical Geology</i> , 2020, 550, 119741.	3.3	2
81	Extrusive upper crust formation at slow-spreading ridges: Fault steering of lava flows. <i>Earth and Planetary Science Letters</i> , 2021, 576, 117202.	4.4	2
82	Seismic Ambient Noise Imaging of a Quasi-Amagmatic Ultra-Slow Spreading Ridge. <i>Remote Sensing</i> , 2021, 13, 2811.	4.0	1