

Luca Caricchi

List of Publications by Year in descending order

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66
papers

3,243
citations

159585

30
h-index

155660

55
g-index

74
all docs

74
docs citations

74
times ranked

2272
citing authors

#	ARTICLE	IF	CITATIONS
1	Non-Newtonian rheology of crystal-bearing magmas and implications for magma ascent dynamics. <i>Earth and Planetary Science Letters</i> , 2007, 264, 402-419.	4.4	390
2	A model for the rheology of particle-bearing suspensions and partially molten rocks. <i>Geochemistry, Geophysics, Geosystems</i> , 2009, 10, .	2.5	304
3	Frequency and magnitude of volcanic eruptions controlled by magma injection and buoyancy. <i>Nature Geoscience</i> , 2014, 7, 126-130.	12.9	156
4	Modulation of magmatic processes by CO ₂ flushing. <i>Earth and Planetary Science Letters</i> , 2018, 491, 160-171.	4.4	116
5	Deformation experiments of bubble- and crystal-bearing magmas: Rheological and microstructural analysis. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	115
6	Tempo of magma degassing and the genesis of porphyry copper deposits. <i>Scientific Reports</i> , 2017, 7, 40566.	3.3	115
7	The viscous-brittle transition of crystal-bearing silicic melt: Direct observation of magma rupture and healing. <i>Geology</i> , 2012, 40, 611-614.	4.4	113
8	Degassing processes during lava dome growth: Insights from Santiaguito lava dome, Guatemala. <i>Journal of Volcanology and Geothermal Research</i> , 2011, 202, 153-166.	2.1	106
9	Stochastic modelling of deep magmatic controls on porphyry copper deposit endowment. <i>Scientific Reports</i> , 2017, 7, 44523.	3.3	106
10	Linking rapid magma reservoir assembly and eruption trigger mechanisms at evolved Yellowstone-type supervolcanoes. <i>Geology</i> , 2014, 42, 807-810.	4.4	97
11	Rheology of volatile-bearing crystal mushes: Mobilization vs. viscous death. <i>Chemical Geology</i> , 2013, 345, 16-39.	3.3	85
12	Zircons reveal magma fluxes in the Earth's crust. <i>Nature</i> , 2014, 511, 457-461.	27.8	81
13	Strain-induced magma degassing: insights from simple-shear experiments on bubble bearing melts. <i>Bulletin of Volcanology</i> , 2011, 73, 1245-1257.	3.0	71
14	The influence of cooling, crystallisation and re-melting on the interpretation of geodetic signals in volcanic systems. <i>Earth and Planetary Science Letters</i> , 2014, 388, 166-174.	4.4	60
15	Evidence for Residual Melt Extraction in the Takidani Pluton, Central Japan. <i>Journal of Petrology</i> , 2017, 58, 763-788.	2.8	59
16	Experimental petrology of monotonous intermediate magmas. <i>Geological Society Special Publication</i> , 2015, 422, 105-130.	1.3	54
17	Caldera resurgence driven by magma viscosity contrasts. <i>Nature Communications</i> , 2017, 8, 1750.	12.8	54
18	Experimental determination of electrical conductivity during deformation of melt-bearing olivine aggregates: Implications for electrical anisotropy in the oceanic low velocity zone. <i>Earth and Planetary Science Letters</i> , 2011, 302, 81-94.	4.4	53

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19	Propagation of P and S-waves in magmas with different crystal contents: Insights into the crystallinity of magmatic reservoirs. <i>Journal of Volcanology and Geothermal Research</i> , 2008, 178, 740-750.	2.1	50
20	Strain-induced outgassing of three-phase magmas during simple shear. <i>Journal of Geophysical Research: Solid Earth</i> , 2014, 119, 6936-6957.	3.4	50
21	Rheological properties of magma from the 1538 eruption of Monte Nuovo (Phlegrean Fields, Italy): An experimental study. <i>Chemical Geology</i> , 2008, 256, 158-171.	3.3	48
22	Magmatic pulse driven by sea-level changes associated with the Messinian salinity crisis. <i>Nature Geoscience</i> , 2017, 10, 783-787.	12.9	46
23	Machine Learning ThermoBarometry: Application to Clinopyroxene-Bearing Magmas. <i>Journal of Geophysical Research: Solid Earth</i> , 2020, 125, e2020JB020130.	3.4	44
24	The build-up and triggers of volcanic eruptions. <i>Nature Reviews Earth & Environment</i> , 2021, 2, 458-476.	29.7	44
25	The role of H ₂ O on the extraction of melt from crystallising magmas. <i>Earth and Planetary Science Letters</i> , 2019, 508, 85-96.	4.4	43
26	Zircon Petrochronology and ⁴⁰ Ar/ ³⁹ Ar Thermochronology of the Adamello Intrusive Suite, N. Italy: Monitoring the Growth and Decay of an Incrementally Assembled Magmatic System. <i>Journal of Petrology</i> , 2019, 60, 701-722.	2.8	38
27	Potential causes for the non-Newtonian rheology of crystal-bearing magmas. <i>Geochemistry, Geophysics, Geosystems</i> , 2011, 12, .	2.5	37
28	Rheological flow laws for multiphase magmas: An empirical approach. <i>Journal of Volcanology and Geothermal Research</i> , 2016, 321, 158-170.	2.1	37
29	Magma Degassing as a Source of Long-Term Seismicity at Volcanoes: The Ischia Island (Italy) Case. <i>Geophysical Research Letters</i> , 2019, 46, 14421-14429.	4.0	36
30	The temporal evolution of chemical and physical properties of magmatic systems. <i>Geological Society Special Publication</i> , 2015, 422, 1-15.	1.3	34
31	Melt migration in basalt columns driven by crystallization-induced pressure gradients. <i>Nature Communications</i> , 2011, 2, 299.	12.8	31
32	A high-pressure experimental study on the evolution of the silicic magmatism of the Main Ethiopian Rift. <i>Lithos</i> , 2006, 91, 46-58.	1.4	30
33	Unravelling textural heterogeneity in obsidian: Shear-induced outgassing in the Rocche Rosse flow. <i>Journal of Volcanology and Geothermal Research</i> , 2016, 310, 137-158.	2.1	27
34	Machine learning thermobarometry and chemometry using amphibole and clinopyroxene: a window into the roots of an arc volcano (Mount Liamuiga, Saint Kitts). <i>Contributions To Mineralogy and Petrology</i> , 2022, 177, 1.	3.1	27
35	Deglaciation and glacial erosion: A joint control on magma productivity by continental unloading. <i>Geophysical Research Letters</i> , 2016, 43, 1632-1641.	4.0	26
36	A Machine Learning-Based Approach to Clinopyroxene Thermobarometry: Model Optimization and Distribution for Use in Earth Sciences. <i>Journal of Geophysical Research: Solid Earth</i> , 2022, 127, .	3.4	26

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37	The Viscous to Brittle Transition in Crystal- and Bubble-Bearing Magmas. <i>Frontiers in Earth Science</i> , 2015, 3, .	1.8	25
38	Insights into the mechanisms and timescales of pluton assembly from deformation patterns of mafic enclaves. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	24
39	Application of fractal fragmentation theory to natural pyroclastic deposits: Insights into volcanic explosivity of the Valentano scoria cone (Italy). <i>Journal of Volcanology and Geothermal Research</i> , 2011, 202, 200-210.	2.1	23
40	Determining the current size and state of subvolcanic magma reservoirs. <i>Nature Communications</i> , 2020, 11, 5477.	12.8	22
41	Rheological control on the dynamics of explosive activity in the 2000 summit eruption of Mt. Etna. <i>Solid Earth</i> , 2010, 1, 61-69.	2.8	22
42	Determining the State of Activity of Transcrustal Magmatic Systems and Their Volcanoes. <i>Annual Review of Earth and Planetary Sciences</i> , 2022, 50, 231-259.	11.0	22
43	Estimates of Volume and Magma Input in Crustal Magmatic Systems from Zircon Geochronology: The Effect of Modeling Assumptions and System Variables. <i>Frontiers in Earth Science</i> , 0, 4, .	1.8	21
44	Regional variability in the frequency and magnitude of large explosive volcanic eruptions. <i>Geology</i> , 2017, 45, 111-114.	4.4	21
45	Application of High Spatial Resolution Laser Ablation ICP-MS to Crystal-Melt Trace Element Partition Coefficient Determination. <i>Geostandards and Geoanalytical Research</i> , 2007, 31, 13-25.	1.9	18
46	Magma diversity reflects recharge regime and thermal structure of the crust. <i>Scientific Reports</i> , 2020, 10, 11867.	3.3	18
47	A Recurrent Magmatic Pattern on Observable Timescales Prior to Plinian Eruptions From Nevado de Toluca (Mexico). <i>Journal of Geophysical Research: Solid Earth</i> , 2019, 124, 10999-11021.	3.4	17
48	In situ X-ray tomographic microscopy observations of vesiculation of bubble-free and bubble-bearing magmas. <i>Bulletin of Volcanology</i> , 2015, 77, 1.	3.0	16
49	Melt segregation and the architecture of magmatic reservoirs: insights from the Muroto sill (Japan). <i>Contributions To Mineralogy and Petrology</i> , 2019, 174, 1.	3.1	16
50	Magmatic Forcing of Cenozoic Climate?. <i>Journal of Geophysical Research: Solid Earth</i> , 2020, 125, e2018JB016460.	3.4	15
51	A Data Driven Approach to Investigate the Chemical Variability of Clinopyroxenes From the 2014â€“2015 Holuhraunâ€“BÃ¡rdarbunga Eruption (Iceland). <i>Frontiers in Earth Science</i> , 2020, 8, .	1.8	14
52	Temporal Magnetotellurics Reveals Mechanics of the 2012 Mount Tongariro, NZ, Eruption. <i>Geophysical Research Letters</i> , 2020, 47, e2019GL086429.	4.0	14
53	Zircon geochronology suggests a long-living and active magmatic system beneath the Ciomadul volcanic dome field (eastern-central Europe). <i>Earth and Planetary Science Letters</i> , 2021, 565, 116965.	4.4	14
54	Quantitative chemical mapping of plagioclase as a tool for the interpretation of volcanic stratigraphy: an example from Saint Kitts, Lesser Antilles. <i>Bulletin of Volcanology</i> , 2021, 83, 51.	3.0	13

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55	Growth and thermal maturation of the Toba magma reservoir. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	12
56	Timescales and thermal evolution of large silicic magma reservoirs during an ignimbrite flare-up: perspectives from zircon. Contributions To Mineralogy and Petrology, 2021, 176, 1.	3.1	12
57	Supergiant porphyry copper deposits are failed large eruptions. Communications Earth & Environment, 2022, 3, .	6.8	12
58	Tectonic Controls on Global Variations of Large-Magnitude Explosive Eruptions in Volcanic Arcs. Frontiers in Earth Science, 2020, 8, .	1.8	11
59	Magmatic Evolution of Zoned and Unzoned Ignimbrites: Evidence for a Complex Crustal Architecture Feeding four Rapid-sequence, Caldera-forming Eruptions in the San Juan Mountains, Colorado. Journal of Petrology, 2021, 62, .	2.8	10
60	Experimental constraints on the crystallization of natrocarbonatitic lava flows. Bulletin of Volcanology, 2009, 71, 1179-1193.	3.0	9
61	A cross correlation method for chemical profiles in minerals, with an application to zircons of the Kilgore Tuff (USA). Contributions To Mineralogy and Petrology, 2018, 173, 1.	3.1	9
62	CO ₂ favours the accumulation of excess fluids in felsic magmas. Terra Nova, 2021, 33, 120-128.	2.1	8
63	From magma ascent to ash generation: investigating volcanic conduit processes by integrating experiments, numerical modeling, and observations. Annals of Geophysics, 2017, 60, .	1.0	5
64	The Long-Term Life-Cycle of Nevado de Toluca Volcano (Mexico): Insights Into the Origin of Petrologic Modes. Frontiers in Earth Science, 2020, 8, .	1.8	3
65	Seismic Attenuation During Magma Vesiculation: A Combination of Laboratory Constraints and Modeling. Geophysical Research Letters, 2021, 48, e2020GL092315.	4.0	2
66	Does the Shape of a Volcano Reflect Its Personality?. Frontiers for Young Minds, 2018, 6, .	0.8	0