Diego Perugini

List of Publications by Year
in descending order

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118 papers	3,328 citations	109321 35 h-index	175258 52 g-index
129 all docs	129 docs citations	129 times ranked	2367 citing authors

#	Article	IF	Citations
1	Magma mixing in the Sithonia Plutonic Complex, Greece: evidence from mafic microgranular enclaves. Mineralogy and Petrology, 2003, 78, 173-200.	1.1	162
2	The mixing of magmas in plutonic and volcanic environments: Analogies and differences. Lithos, 2012, 153, 261-277.	1.4	125
3	Chaotic advection, fractals and diffusion during mixing of magmas: evidence from lava flows. Journal of Volcanology and Geothermal Research, 2003, 124, 255-279.	2.1	105
4	PetroGraph: A new software to visualize, model, and present geochemical data in igneous petrology. Geochemistry, Geophysics, Geosystems, 2005, 6, n/a-n/a.	2.5	98
5	Eruption dynamics of the 22â€“23 April 2015 Calbuco Volcano (Southern Chile): Analyses of tephra fall deposits. Journal of Volcanology and Geothermal Research, 2016, 317, 15-29.	2.1	94
6	Enhancement of magma mixing efficiency by chaotic dynamics: an experimental study. Contributions To Mineralogy and Petrology, 2011, 161, 863-881.	3.1	91
7	â€œExplosive energyâ€•during volcanic eruptions from fractal analysis of pyroclasts. Earth and Planetary Science Letters, 2006, 248, 800-807.	4.4	82
8	Diffusive fractionation of trace elements by chaotic mixing of magmas. Earth and Planetary Science Letters, 2006, 243, 669-680.	4.4	79
9	Chaotic dynamics and fractals in magmatic interaction processes: a different approach to the interpretation of mafic microgranular enclaves. Earth and Planetary Science Letters, 2000, 175, 93-103.	4.4	76
10	Kinematic significance of morphological structures generated by mixing of magmas: a case study from Salina Island (southern Italy). Earth and Planetary Science Letters, 2004, 222, 1051-1066.	4.4	75
11	Trace element mobility during magma mixing: Preliminary experimental results. Chemical Geology, 2008, 256, 146-157.	3.3	75
12	Strain-induced magma degassing: insights from simple-shear experiments on bubble bearing melts. Bulletin of Volcanology, 2011, 73, 1245-1257.	3.0	71
13	Viscous fingering during replenishment of felsic magma chambers by continuous inputs of mafic magmas: Field evidence and fluid-mechanics experiments. Geology, 2005, 33, 5.	4.4	69
14	Solving petrological problems through machine learning: the study case of tectonic discrimination using geochemical and isotopic data. Contributions To Mineralogy and Petrology, 2016, 171, 1.	3.1	67
15	Extreme frictional processes in the volcanic conduit of Mount St. Helens (USA) during the 2004â€“2008 eruption. Journal of Structural Geology, 2012, 38, 61-76.	2.3	59
16	Heterogeneities in magma chambers: Insights from the behavior of major and minor elements during mixing experiments with natural alkaline melts. Chemical Geology, 2008, 256, 131-145.	3.3	57
17	Analysis and simulation of magma mixing processes in 3D. Lithos, 2002, 65, 313-330.	1.4	55
18	Strange attractors in plagioclase oscillatory zoning: petrological implications. Contributions To Mineralogy and Petrology, 2005, 149, 482-497.	3.1	53

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19	Approximate chemical analysis of volcanic glasses using Raman spectroscopy. Journal of Raman Spectroscopy, 2015, 46, 1235-1244.	2.5	53
20	Tourmaline nodules from Capo Bianco aplite (Elba Island, Italy): an example of diffusion limited aggregation growth in a magmatic system. Contributions To Mineralogy and Petrology, 2007, 153, 493-508.	3.1	50
21	Time-scales of recent Phlegrean Fields eruptions inferred from the application of a â€˜diffusive fractionationâ€™ model of trace elements. Bulletin of Volcanology, 2010, 72, 431-447.	3.0	50
22	Interplay between geochemistry and magma dynamics during magma interaction: An example from the Sithonia Plutonic Complex (NE Greece). Lithos, 2007, 95, 243-266.	1.4	49
23	Interactions between rhyolitic and basaltic melts unraveled by chaotic mixing experiments. Chemical Geology, 2013, 346, 199-212.	3.3	44
24	Machine Learning Thermoâ€Barometry: Application to Clinopyroxeneâ€Bearing Magmas. Journal of Geophysical Research: Solid Earth, 2020, 125, e2020JB020130.	3.4	44
25	The Role of Chaotic Dynamics and Flow Fields in the Development of Disequilibrium Textures in Volcanic Rocks. Journal of Petrology, 2003, 44, 733-756.	2.8	43
26	Analysis and numerical simulation of chaotic advection and chemical diffusion during magma mixing: petrological implications. Lithos, 2004, 78, 43-66.	1.4	43
27	AMFORM, a new mass-based model for the calculation of the unit formula of amphiboles from electron microprobe analyses. American Mineralogist, 2018, 103, 1112-1125.	1.9	41
28	The â€œsmall-worldâ€•topology of rock fracture networks. Physica A: Statistical Mechanics and Its Applications, 2007, 377, 323-328.	2.6	40
29	Graphite electrode lithium tetraborate fusion for trace element determination in bulk geological samples by laser ablation ICP-MS. Mikrochimica Acta, 2007, 158, 275-282.	5.0	40
30	Time-scales of hybridisation of magmatic enclaves in regular and chaotic flow fields: petrologic and volcanologic implications. Bulletin of Volcanology, 2006, 68, 285-293.	3.0	39
31	Time evolution of chemical exchanges during mixing of rhyolitic and basaltic melts. Contributions To Mineralogy and Petrology, 2013, 166, 615-638.	3.1	39
32	Concentration variance decay during magma mixing: a volcanic chronometer. Scientific Reports, 2015, 5, 14225.	3.3	39
33	Insights into magma chamber processes from the analysis of size distribution of enclaves in lava flows: A case study from Vulcano Island (Southern Italy). Journal of Volcanology and Geothermal Research, 2007, 166, 193-203.	2.1	38
34	Particle size distributions of some soils from the Umbria Region (Italy): Fractal analysis and numerical modelling. Geoderma, 2008, 145, 185-195.	5.1	38
35	Timescales of water accumulation in magmas and implications for short warning times of explosive eruptions. Nature Communications, 2018, 9, 770.	12.8	38
36	The space and time complexity of chaotic mixing of silicate melts: Implications for igneous petrology. Lithos, 2012, 155, 326-340.	1.4	37

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37	Transition to chaos and implications for time-scales of magma hybridization during mixing processes in magma chambers. Lithos, 2011, 125, 211-220.	1.4	35
38	High spatial resolution trace element determination of geological samples by laser ablation quadrupole plasma mass spectrometry: implications for glass analysis in volcanic products. Geosciences Journal, 2016, 20, 851-863.	1.2	35
39	Strange attractors in magmas: evidence from lava flows. Lithos, 2002, 65, 287-297.	1.4	32
40	Experimental constraints on the rheology, eruption, and emplacement dynamics of analog lavas comparable to Mercury's northern volcanic plains. Journal of Geophysical Research E: Planets, 2017, 122, 1522-1538.	3.6	31
41	The unexpected explosive sub-Plinian eruption of Calbuco volcano (22â€“23 April 2015; southern Chile): Triggering mechanism implications. Journal of Volcanology and Geothermal Research, 2019, 378, 35-50.	2.1	31
42	Combining machine learning techniques, microanalyses and large geochemical datasets for tephrochronological studies in complex volcanic areas: New age constraints for the Pleistocene magmatism of central Italy. Quaternary Geochronology, 2017, 40, 33-44.	1.4	30
43	Degassing behaviour at basaltic volcanoes: New insights from experimental investigations of different conduit geometry and magma viscosity. Earth-Science Reviews, 2019, 192, 317-336.	9.1	30
44	Mantle-derived and crustal melts dichotomy in northern Greece: spatiotemporal and geodynamic implications. Geological Journal, 2004, 39, 63-80.	1.3	28
45	Viscosity of Pyroxenite Melt and Its Evolution During Cooling. Journal of Geophysical Research E: Planets, 2019, 124, 1451-1469.	3.6	28
46	Fractal analysis of experimentally generated pyroclasts: A tool for volcanic hazard assessment. Acta Geophysica, 2012, 60, 682-698.	2.0	26
47	Relaxation of concentration variance: A new tool to measure chemical element mobility during mixing of magmas. Chemical Geology, 2013, 335, 8-23.	3.3	26
48	The Grizzly Lake complex (Yellowstone Volcano, USA): Mixing between basalt and rhyolite unraveled by microanalysis and X-ray microtomography. Lithos, 2016, 260, 457-474.	1.4	26
49	Role of magma mixing in the pre-eruptive dynamics of the Aeolian Islands volcanoes (Southern) Tj ETQq1 1 0.784314 rgBT /Overlock	1.4	26
50	Microâ€Analytical Zircon and Monazite Uâ€Pb Isotope Dating by Laser Ablationâ€Inductively Coupled Plasmaâ€Quadrupole Mass Spectrometry. Geostandards and Geoanalytical Research, 2008, 32, 103-120.	1.9	25
51	Dynamics and time evolution of a shallow plumbing system: The 1739 and 1888â€“90 eruptions, Vulcano Island, Italy. Journal of Volcanology and Geothermal Research, 2015, 306, 74-82.	2.1	24
52	Water-enhanced interdiffusion of major elements between natural shoshonite and high-K rhyolite melts. Chemical Geology, 2017, 466, 86-101.	3.3	24
53	Application of fractal fragmentation theory to natural pyroclastic deposits: Insights into volcanic explosivity of the Valentano scoria cone (Italy). Journal of Volcanology and Geothermal Research, 2011, 202, 200-210.	2.1	23
54	Tracking plumbing system dynamics at the Campi Flegrei caldera, Italy: High-resolution trace element mapping of the Astroni crystal cargo. Lithos, 2018, 318-319, 464-477.	1.4	23

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55	Titanite-bearing calc-silicate rocks constrain timing, duration and magnitude of metamorphic CO 2 degassing in the Himalayan belt. Lithos, 2017, 292-293, 364-378.	1.4	22
56	Exponential decay of concentration variance during magma mixing: Robustness of a volcanic chronometer and implications for the homogenization of chemical heterogeneities in magmatic systems. Lithos, 2017, 286-287, 396-407.	1.4	22
57	Combined Sr-Nd isotopic and geochemical fingerprinting as a tool for identifying tephra layers: Application to deep-sea cores from Eastern Mediterranean Sea. Chemical Geology, 2016, 443, 121-136.	3.3	21
58	Morphometric analysis of magmatic enclaves: a tool for understanding magma vesiculation and ascent. Lithos, 2002, 61, 225-235.	1.4	20
59	Development of viscous fingering between mafic and felsic magmas: evidence from the Terra Nova Intrusive Complex (Antarctica). Mineralogy and Petrology, 2005, 83, 151-166.	1.1	20
60	Morphochemistry of patterns produced by mixing of rhyolitic and basaltic melts. Journal of Volcanology and Geothermal Research, 2013, 253, 87-96.	2.1	20
61	Experimental constraints on the origin of pahoehoe â€œciciraraâ€•lavas at Mt. Etna Volcano (Sicily, Italy). Bulletin of Volcanology, 2015, 77, 1.	3.0	19
62	Enhancement of eruption explosivity by heterogeneous bubble nucleation triggered by magma mingling. Scientific Reports, 2017, 7, 16897.	3.3	18
63	The â€˜small-worldâ€™ nature of fracture/conduit networks: Possible implications for disequilibrium transport of magmas beneath mid-ocean ridges. Journal of Volcanology and Geothermal Research, 2007, 159, 355-365.	2.1	17
64	High-temperature apparatus for chaotic mixing of natural silicate melts. Review of Scientific Instruments, 2015, 86, 105108.	1.3	17
65	Magma mixing enhanced by bubble segregation. Solid Earth, 2015, 6, 1007-1023.	2.8	17
66	Effects of chaotic advection on the timescales of cooling and crystallization of magma bodies at mid crustal levels. Geochemistry, Geophysics, Geosystems, 2016, 17, 425-441.	2.5	17
67	Magma Mixing: History and Dynamics of an Eruption Trigger. Advances in Volcanology, 2017, , 123-137.	1.1	17
68	Diffusive exchange of trace elements between alkaline melts: Implications for element fractionation and timescale estimations during magma mixing. Geochimica Et Cosmochimica Acta, 2018, 233, 95-114.	3.9	15
69	Application of a cellular automata model to the study of soil particle size distributions. Physica A: Statistical Mechanics and Its Applications, 2007, 383, 595-602.	2.6	13
70	Quantifying magma mixing with the Shannon entropy: Application to simulations and experiments. Lithos, 2015, 236-237, 299-310.	1.4	13
71	The San Gregorio Magno lacustrine basin (Campania, southern Italy): improved characterization of the tephrostratigraphic markers based on trace elements and isotopic data. Journal of Quaternary Science, 2019, 34, 393-404.	2.1	13
72	Retrieving magma composition from TIR spectra: implications for terrestrial planets investigations. Scientific Reports, 2019, 9, 15200.	3.3	13

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73	Unravelling the complex interaction between mantle and crustal magmas encoded in the lavas of San Vincenzo (Tuscany, Italy). Part I: Petrography and Thermobarometry. Lithos, 2016, 244, 218-232.	1.4	12
74	Determination of changes in the concentration and distribution of elements within olive drupes (cv.) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 5 spectrometry. Journal of the Science of Food and Agriculture, 2018, 98, 4971-4977.	3.5	12
75	Pre-eruptive conditions and triggering mechanism of the ~â€‰16Âka Santa BÃ¡rbara explosive eruption of Sete Cidades Volcano (SÃ£o Miguel, Azores). Contributions To Mineralogy and Petrology, 2019, 174, 1.	3.1	12
76	Biased Volcanic Hazard Assessment Due to Incomplete Eruption Records on Ocean Islands: An Example of Sete Cidades Volcano, Azores. Frontiers in Earth Science, 2019, 7, .	1.8	12
77	Viscosity behaviour of silicate melts during cooling under variable shear rates. Journal of Non-Crystalline Solids, 2020, 533, 119902.	3.1	12
78	High-resolution geochemistry of volcanic ash highlights complex magma dynamics during the EyjafjallajÃ¶kull 2010 eruption. American Mineralogist, 2017, 102, 1173-1186.	1.9	12
79	Restitic or not? Insights from trace element content and crystal â€" Structure of spinels in African mantle xenoliths. Lithos, 2017, 278-281, 464-476.	1.4	10
80	Time evolution of transient volcanic plumes: Insights from fractal analysis. Journal of Volcanology and Geothermal Research, 2019, 371, 59-71.	2.1	10
81	Visible and near-InfraRed (VNIR) reflectance of silicate glasses: Characterization of a featureless spectrum and implications for planetary geology. Icarus, 2022, 374, 114801.	2.5	10
82	Phosphorus zoning as a recorder of crystal growth kinetics: application to second-generation olivine in mantle xenoliths from the Cima Volcanic Field. Contributions To Mineralogy and Petrology, 2017, 172, 1.	3.1	9
83	Fractal Analysis of Enclaves as a New Tool for Estimating Rheological Properties of Magmas During Mixing: The Case of MontaÃ±a Reventada (Tenerife, Canary Islands). Pure and Applied Geophysics, 2015, 172, 1803-1814.	1.9	8
84	Cooling history and emplacement of a pyroxenitic lava as proxy for understanding Martian lava flows. Scientific Reports, 2019, 9, 17051.	3.3	8
85	Determination of the degree of compositional disorder in magmatic enclaves using SEM X-ray element maps. European Journal of Mineralogy, 2004, 16, 431-442.	1.3	8
86	An experimental device for characterizing degassing processes and related elastic fingerprints: Analog volcano seismo-acoustic observations. Review of Scientific Instruments, 2018, 89, 055102.	1.3	7
87	MorphoUt 1.0: utilities for closed shape morphometry. Computers and Geosciences, 2002, 28, 73-79.	4.2	6
88	Unravelling the complex interaction between mantle and crustal magmas encoded in the lavas of San Vincenzo (Tuscany, Italy). Part II: Geochemical overview and modelling. Lithos, 2016, 244, 233-249.	1.4	6
89	Gas mobility in rheologically-layered volcanic conduits: The role of decompression rate and crystal content on the ascent dynamics of magmas. Earth and Planetary Science Letters, 2019, 524, 115732.	4.4	6
90	Volcanic ash generation: Effects of componentry, particle size and conduit geometry on size-reduction processes. Earth and Planetary Science Letters, 2019, 514, 13-27.	4.4	6

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91	Pre-Eruptive Conditions and Dynamics Recorded in Banded Pumices from the El Abrigo Caldera-Forming Eruption (Tenerife, Canary Islands). Journal of Petrology, 2022, 63, .	2.8	6
92	VNIR reflectance spectra of silicate-graphite mixtures: The effect of graphite content and particle size. Icarus, 2022, 378, 114950.	2.5	6
93	Determination of travertine provenance from ancient buildings using self-organizing maps and fuzzy logic. Applied Artificial Intelligence, 2003, 17, 885-900.	3.2	5
94	Chaotic Mixing in the System Earth: Mixing Granitic and Basaltic Liquids. , 2010, , .		5
95	Non-invasive assessment of the formation of tourmaline nodules by X-ray microtomography and computer modeling. American Mineralogist, 2015, 100, 459-465.	1.9	5
96	Interdiffusion of major elements at 1 atmosphere between natural shoshonitic and rhyolitic melts. American Mineralogist, 2019, 104, 1444-1454.	1.9	5
97	Rheological evolution of eruptible Basaltic-Andesite Magmas under dynamic conditions: The importance of plagioclase growth rates. Journal of Volcanology and Geothermal Research, 2021, 420, 107411.	2.1	5
98	The lifecycle of volcanic ash: advances and ongoing challenges. Bulletin of Volcanology, 2022, 84, 1.	3.0	5
99	Analysis of concentration patterns in volcanic rocks: Insights into dynamics of highly explosive volcanic eruptions. Physica A: Statistical Mechanics and its Applications, 2006, 370, 741-746.	2.6	4
100	Influence of landscape morphology and vegetation cover on the sampling of mixed plutonic bodies. Mineralogy and Petrology, 2007, 90, 1-17.	1.1	4
101	Syneruptive sequential fragmentation of pyroclasts from fractal modeling of grain size distributions of fall deposits: the Cretaio Tephra eruption (Ischia Island, Italy). Journal of Volcanology and Geothermal Research, 2017, 345, 161-171.	2.1	4
102	Rheological changes in melts and magmas induced by crystallization and strain rate. Comptes Rendus - Geoscience, 2022, 354, 227-248.	1.2	4
103	A virtual voyage through 3D structures generated by chaotic mixing of magmas and numerical simulations: a new approach for understanding spatial and temporal complexity of magma dynamics. Visual Geosciences, 2008, 13, 1-24.	0.5	3
104	Cooling of a Magmatic System Under Thermal Chaotic Mixing. Pure and Applied Geophysics, 2015, 172, 1835-1849.	1.9	3
105	MgAl 2 O 4 spinels from Allende and NWA 763 carbonaceous chondrites: Structural refinement, cooling history, and trace element contents. Meteoritics and Planetary Science, 2019, 54, 3089-3100.	1.6	3
106	Rifting and recharge as triggers of the mixed basaltâ€“rhyolite HalarauÃ°ur ignimbrite eruption (Krafla,) Tj ETQq0 0 0 rgBT /Overlock 10	3.1	3
107	Seismo-acoustic gliding: An experimental study. Earth and Planetary Science Letters, 2022, 579, 117344.	4.4	2
108	Magmatic Processes at Euganean Hills (Veneto Volcanic Province, Italy): Clinopyroxene Investigation to Unravel Magmatic Interactions. Geosciences (Switzerland), 2022, 12, 108.	2.2	2

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109	Fractal Dimension of Geologically Constrained Crater Populations of Mercury. Pure and Applied Geophysics, 2015, 172, 1999-2008.	1.9	1
110	Introduction to the Topical Volume â€œFractals and Dynamic Systems in Geoscienceâ€• Pure and Applied Geophysics, 2015, 172, 1781-1785.	1.9	1
111	A comparison between the sub-continental lithospheric mantle of Libya, Morocco and Cameroon: Evidences from structural data and trace element of mantle xenolith Cr-diopsides. Journal of African Earth Sciences, 2019, 158, 103521.	2.0	1
112	The Chaotic Mixing of Fluids. Advances in Volcanology, 2021, , 29-37.	1.1	1
113	Magma Mixing: The Trigger for Explosive Volcanic Eruptions. Advances in Volcanology, 2021, , 135-148.	1.1	1
114	The Fingerprint of Magma Mixing in Minerals. Advances in Volcanology, 2021, , 113-126.	1.1	1
115	HUSH app: digital tools to explore the natural patrimony of urban areas. IOP Conference Series: Earth and Environmental Science, 2020, 509, 012034.	0.3	0
116	A Geochemical Clock to Measure Timescales of Volcanic Eruptions. Advances in Volcanology, 2021, , 149-160.	1.1	0
117	The Beginning: Mafic Magmas Invading Felsic Magma Chambers. Advances in Volcanology, 2021, , 77-86.	1.1	0
118	What is Magma Mixing?. Advances in Volcanology, 2021, , 3-12.	1.1	0