Andrea Tommasi

List of Publications by Year
in descending order

122	6,244	50276	74163
papers	citations	46 h-index	75 g-index

131	131	131	3493
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Viscoplastic self-consistent and equilibrium-based modeling of olivine lattice preferred orientations: Implications for the upper mantle seismic anisotropy. Journal of Geophysical Research, 2000, 105, 7893-7908.	3.3	310
2	The Lherz spinel lherzolite: Refertilized rather than pristine mantle. Earth and Planetary Science Letters, 2007, 259, 599-612.	4.4	305
3	Pressure sensitivity of olivine slip systems and seismic anisotropy of Earth's upper mantle. Nature, 2005, 433, 731-733.	27.8	242
4	Upper mantle tectonics: three-dimensional deformation, olivine crystallographic fabrics and seismic properties. Earth and Planetary Science Letters, 1999, 168, 173-186.	4.4	210
5	Continental rifting parallel to ancient collisional belts: an effect of the mechanical anisotropy of the lithospheric mantle. Earth and Planetary Science Letters, 2001, 185, 199-210.	4.4	209
6	Olivine, and the Origin of Kimberlite. Journal of Petrology, 2010, 51, 573-602.	2.8	157
7	Deformation and Fluid-Rock Interaction in the Supra-subduction Mantle: Microstructures and Water Contents in Peridotite Xenoliths from the Avacha Volcano, Kamchatka. Journal of Petrology, 2010, 51, 363-394.	2.8	150
8	Deformation patterns in the southern Brazilian branch of the Dom Feliciano Belt: A reappraisal. Journal of South American Earth Sciences, 1992, 5, 77-96.	1.4	149
9	Why do continents break-up parallel to ancient orogenic belts?. Terra Nova, 1997, 9, 62-66.	2.1	146
10	Rheological heterogeneity, mechanical anisotropy and deformation of the continental lithosphere. Tectonophysics, 1998, 296, 61-86.	2.2	141
11	Faults (shear zones) in the Earth's mantle. Tectonophysics, 2012, 558-559, 1-27.	2.2	136
12	Magma-assisted strain localization in an orogen-parallel transcurrent shear zone of southern Brazil. Tectonics, 1994, 13, 421-437.	2.8	135
13	Forward modeling of the development of seismic anisotropy in the upper mantle. Earth and Planetary Science Letters, 1998, 160, 1-13.	4.4	132
14	Plastic deformation and development of clinopyroxene lattice preferred orientations in eclogites. Journal of Structural Geology, 2002, 24, 1357-1368.	2.3	118
15	Structural reactivation in plate tectonics controlled by olivine crystal anisotropy. Nature Geoscience, 2009, 2, 423-427.	12.9	111
16	Deformation, static recrystallization, and reactive melt transport in shallow subcontinental mantle xenoliths (Tok Cenozoic volcanic field, SE Siberia). Earth and Planetary Science Letters, 2008, 272, 65-77.	4.4	104
17	Deformation and Reactive Melt Transport in the Mantle Lithosphere above a Large-scale Partial Melting Domain: the Ronda Peridotite Massif, Southern Spain. Journal of Petrology, 2009, 50, 1235-1266.	2.8	102
18	Low strength of Earthâ€™s uppermost mantle inferred from tri-axial deformation experiments on dry olivine crystals. Physics of the Earth and Planetary Interiors, 2013, 220, 37-49.	1.9	93

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19	Seismic anisotropy and compositionally induced velocity anomalies in the lithosphere above mantle plumes: a petrological and microstructural study of mantle xenoliths from French Polynesia. Earth and Planetary Science Letters, 2004, 227, 539-556.	4.4	89
20	Heterogeneity and anisotropy in the lithospheric mantle. Tectonophysics, 2015, 661, 11-37.	2.2	89
21	Feedback between melt percolation and deformation in an exhumed lithosphereâ€“asthenosphere boundary. Earth and Planetary Science Letters, 2008, 274, 401-413.	4.4	88
22	Deformation and hydration of the lithospheric mantle beneath the Kaapvaal craton, South Africa. Lithos, 2012, 149, 31-50.	1.4	88
23	Crystal preferred orientations of garnet: comparison between numerical simulations and electron back-scattered diffraction (EBSD) measurements in naturally deformed eclogites. Journal of Structural Geology, 2004, 26, 2089-2102.	2.3	82
24	Self-indentation of a heterogeneous continental lithosphere. Geology, 1994, 22, 967.	4.4	75
25	Upper mantle deformation and seismic anisotropy in continental rifts. Physics and Chemistry of the Earth, 2000, 25, 111-117.	0.6	71
26	Deformation and seismic anisotropy of the lithospheric mantle in the southeastern Carpathians inferred from the study of mantle xenoliths. Earth and Planetary Science Letters, 2008, 272, 50-64.	4.4	70
27	Deformation of olivine in torsion under hydrous conditions. Physics of the Earth and Planetary Interiors, 2012, 202-203, 56-70.	1.9	68
28	Predicted glide systems and crystal preferred orientations of polycrystalline silicate Mg-Perovskite at high pressure: Implications for the seismic anisotropy in the lower mantle. Earth and Planetary Science Letters, 2008, 271, 135-144.	4.4	66
29	Anisotropy of thermal diffusivity in the upper mantle. Nature, 2001, 411, 783-786.	27.8	63
30	Thermal diffusivity of upper mantle rocks: Influence of temperature, pressure, and the deformation fabric. Journal of Geophysical Research, 2003, 108, .	3.3	63
31	Initiation and propagation of shear zones in a heterogeneous continental lithosphere. Journal of Geophysical Research, 1995, 100, 22083-22101.	3.3	62
32	Fluid transfer into the wedge controlled by high-pressure hydrofracturing in the cold top-slab mantle. Earth and Planetary Science Letters, 2010, 297, 271-286.	4.4	62
33	Deformation and melt transport in a highly depleted peridotite massif from the Canadian Cordillera: Implications to seismic anisotropy above subduction zones. Earth and Planetary Science Letters, 2006, 252, 245-259.	4.4	60
34	Feedbacks between deformation and melt distribution in the crustâ€“mantle transition zone of the Oman ophiolite. Earth and Planetary Science Letters, 2012, 359-360, 61-72.	4.4	60
35	Strain-induced seismic anisotropy of wadsleyite polycrystals and flow patterns in the mantle transition zone. Journal of Geophysical Research, 2004, 109, .	3.3	59
36	Upper-mantle flow beneath French Polynesia from shear wave splitting. Geophysical Journal International, 2007, 170, 1262-1288.	2.4	59

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37	Plastic deformation and development of antigorite crystal preferred orientation in high-pressure serpentinites. Earth and Planetary Science Letters, 2012, 349-350, 75-86.	4.4	58
38	The Beni Bousera Peridotite (Rif Belt, Morocco): an Oblique-slip Low-angle Shear Zone Thinning the Subcontinental Mantle Lithosphere. Journal of Petrology, 2014, 55, 283-313.	2.8	58
39	Characterization of hydration in the mantle lithosphere: Peridotite xenoliths from the Ontong Java Plateau as an example. Lithos, 2015, 212-215, 189-201.	1.4	56
40	The effect of dynamic recrystallization on olivine crystal preferred orientations in mantle xenoliths deformed under varied stress conditions. Journal of Structural Geology, 2011, 33, 1528-1540.	2.3	52
41	Deformation of a pervasively molten middle crust: insights from the neoproterozoic Ribeiraâ€ÁraÃ§uaÃ-orogen (SE Brazil). Terra Nova, 2007, 19, 278-286.	2.1	50
42	Slip systems and plastic shear anisotropy in Mg2SiO4 ringwoodite: insights from numerical modelling. European Journal of Mineralogy, 2006, 18, 149-160.	1.3	49
43	Anatomy of an extensional shear zone in the mantle, Lanzo massif, Italy. Geochemistry, Geophysics, Geosystems, 2011, 12, n/a-n/a.	2.5	49
44	Numerical simulations of depth-dependent anisotropy and frequency-dependent wave propagation effects. Journal of Geophysical Research, 1999, 104, 23141-23153.	3.3	48
45	Wrench faults down to the asthenosphere: geological and geophysical evidence and thermomechanical effects. Geological Society Special Publication, 2003, 210, 15-34.	1.3	47
46	Hydrogen diffusivity and electrical anisotropy of a peridotite mantle. Geophysical Journal International, 2005, 160, 1092-1102.	2.4	47
47	Viscoplasticity of polycrystalline olivine experimentally deformed at high pressure and 900Â°C. Tectonophysics, 2014, 623, 123-135.	2.2	47
48	Seismic anisotropy in ocean basins: Resistive drag of the sublithospheric mantle?. Geophysical Research Letters, 1996, 23, 2991-2994.	4.0	44
49	Continental-scale rheological heterogeneities and complex intraplate tectono-metamorphic patterns: insights from a case-study and numerical models. Tectonophysics, 1997, 279, 327-350.	2.2	44
50	Melt-rock interactions, deformation, hydration and seismic properties in the sub-arc lithospheric mantle inferred from xenoliths from seamounts near Lihir, Papua New Guinea. Tectonophysics, 2013, 608, 330-345.	2.2	44
51	Deformation processes and rheology of pyroxenites under lithospheric mantle conditions. Journal of Structural Geology, 2012, 39, 138-157.	2.3	41
52	Deformation, hydration, and anisotropy of the lithospheric mantle in an active rift: Constraints from mantle xenoliths from the North Tanzanian Divergence of the East African Rift. Tectonophysics, 2015, 639, 34-55.	2.2	40
53	Forsterite to wadsleyite phase transformation under shear stress and consequences for the Earth's mantle transition zone. Physics of the Earth and Planetary Interiors, 2011, 184, 91-104.	1.9	38
54	Deformation in a partially molten mantle: Constraints from plagioclase lherzolites from Lanzo, western Alps. Tectonophysics, 2014, 615-616, 167-181.	2.2	38

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55	Fluid-assisted strain localization in the shallow subcontinental lithospheric mantle. Lithos, 2016, 262, 636-650.	1.4	38
56	Thermal diffusivity of olivine single crystals and a dunite at high temperature: Evidence for heat transfer by radiation in the upper mantle. Physics of the Earth and Planetary Interiors, 2005, 151, 129-141.	1.9	36
57	Development of texture and seismic anisotropy during the onset of subduction. Geochemistry, Geophysics, Geosystems, 2014, 15, 192-212.	2.5	36
58	Microstructures and seismic properties of south Patagonian mantle xenoliths (Gobernador Gregores) Tj ETQq0 0 0 rgBT /Overlock 10 Tf	2.2	34
59	Analysis of Dynamic Recrystallization of Ice from EBSD Orientation Mapping. Frontiers in Earth Science, 2015, 3, .	1.8	33
60	Intraplate continental deformation: Influence of a heat-producing layer in the lithospheric mantle. Earth and Planetary Science Letters, 2008, 274, 392-400.	4.4	32
61	Hydrous melts weaken the mantle, crystallization of pargasite and phlogopite does not: Insights from a petrostructural study of the Finero peridotites, southern Alps. Earth and Planetary Science Letters, 2017, 477, 59-72.	4.4	32
62	Microstructures, composition, and seismic properties of the <scp>O</scp>ntong <scp>J</scp>ava <scp>P</scp>lateau mantle root. Geochemistry, Geophysics, Geosystems, 2014, 15, 4547-4569.	2.5	30
63	Strain Localization in Pyroxenite by Reaction-Enhanced Softening in the Shallow Subcontinental Lithospheric Mantle. Journal of Petrology, 2013, 54, 1997-2031.	2.8	29
64	Plume-lithosphere interaction beneath a fast moving plate. Geophysical Research Letters, 2006, 33, n/a-n/a.	4.0	28
65	Characterization of the sub-continental lithospheric mantle beneath the Cameroon volcanic line inferred from alkaline basalt hosted peridotite xenoliths from Barombi Mbo and Nyos Lakes. Journal of African Earth Sciences, 2015, 111, 170-193.	2.0	28
66	PLUME investigates South Pacific Superswell. Eos, 2002, 83, 511.	0.1	27
67	Modeling the effect of subgrain rotation recrystallization on the evolution of olivine crystal preferred orientations in simple shear. Earth and Planetary Science Letters, 2015, 430, 356-366.	4.4	27
68	A multiscale approach to model the anisotropic deformation of lithospheric plates. Geochemistry, Geophysics, Geosystems, 2009, 10, .	2.5	26
69	Low steady-state stresses in the cold lithospheric mantle inferred from dislocation dynamics models of dislocation creep in olivine. Earth and Planetary Science Letters, 2015, 432, 232-242.	4.4	26
70	On topotaxy and compaction during antigorite and chlorite dehydration: an experimental and natural study. Contributions To Mineralogy and Petrology, 2015, 169, 1.	3.1	26
71	Dislocation-driven recrystallization in AZ31B magnesium alloy imaged by quasi-in situ EBSD in annealing experiments. Materials Characterization, 2020, 165, 110382.	4.4	26
72	Mantle tectonics beneath New Zealand inferred fromSKSsplitting and petrophysics. Geophysical Journal International, 2005, 163, 760-774.	2.4	24

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73	Petrophysical constraints on the seismic properties of the Kaapvaal craton mantle root. Solid Earth, 2014, 5, 45-63.	2.8	23
74	Flow and electrical anisotropy in the upper mantle: Finite-element models constraints on the effects of olivine crystal preferred orientation and microstructure. Physics of the Earth and Planetary Interiors, 2006, 158, 92-106.	1.9	22
75	Oriented growth of garnet by topotactic reactions and epitaxy in highâ€pressure, mafic garnet granulite formed by dehydration melting of metastable hornblendeâ€gabbronorite (Jijal Complex,) Tj ETQq1 1 0.784314 rgBT /Overlock	4.4	22
76	Composition, textures, seismic and thermal anisotropies of xenoliths from a thin and hot lithospheric mantle (Summit Lake, southern Canadian Cordillera). Tectonophysics, 2011, 507, 1-15.	2.2	22
77	Small-scale convection in a plume-fed low-viscosity layer beneath a moving plate. Geophysical Journal International, 2013, 194, 591-610.	2.4	22
78	Recrystallization processes, microstructure and crystallographic preferred orientation evolution in polycrystalline ice during high-temperature simple shear. Cryosphere, 2019, 13, 1495-1511.	3.9	22
79	Dislocation dynamics modelling of the power-law breakdown in olivine single crystals: Toward a unified creep law for the upper mantle. Earth and Planetary Science Letters, 2019, 506, 282-291.	4.4	22
80	Metasomatized Mantle Xenoliths as a Record of the Lithospheric Mantle Evolution of the Northern Edge of the Ahaggar Swell, In Teria (Algeria). Journal of Petrology, 2016, 57, 345-382.	2.8	21
81	Fluidâ€Enhanced Annealing in the Subcontinental Lithospheric Mantle Beneath the Westernmost Margin of the Carpathianâ€Pannonian Extensional Basin System. Tectonics, 2017, 36, 2987-3011.	2.8	20
82	Non-basal dislocations should be accounted for in simulating ice mass flow. Earth and Planetary Science Letters, 2017, 473, 247-255.	4.4	20
83	Thermal diffusivity of olivine single-crystals and polycrystalline aggregates at ambient conditions-a comparison. Geophysical Research Letters, 2003, 30, .	4.0	19
84	Seismic properties of the supraâ€subduction mantle: Constraints from peridotite xenoliths from the Avacha volcano, southern Kamchatka. Geophysical Research Letters, 2010, 37, .	4.0	19
85	Mantle-driven deformation of orogenic zones and clutch tectonics. Geological Society Special Publication, 2004, 227, 41-64.	1.3	18
86	Deformation, annealing, reactive melt percolation, and seismic anisotropy in the lithospheric mantle beneath the southeastern Ethiopian rift: Constraints from mantle xenoliths from Mega. Tectonophysics, 2016, 682, 186-205.	2.2	18
87	Predicting the seismic implications of salt anisotropy using numerical simulations of halite deformation. Geophysics, 2000, 65, 1272-1280.	2.6	17
88	Numerical modelling of the upper-mantle anisotropy beneath a migrating strike-slip plate boundary: the San Andreas Fault system. Geophysical Journal International, 2012, 191, 436-458.	2.4	17
89	The Borborema Strike-Slip Shear Zone System (NE Brazil): Large-Scale Intracontinental Strain Localization in a Heterogeneous Plate. Lithosphere, 2021, 2021, .	1.4	17
90	Investigation of nucleation processes during dynamic recrystallization of ice using cryo-EBSD. Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences, 2017, 375, 20150345.	3.4	16

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91	Refertilization Processes in the Subcontinental Lithospheric Mantle: the Record of the Beni Bousera Orogenic Peridotite (Rif Belt, Northern Morocco). Journal of Petrology, 2016, 57, 2251-2270.	2.8	15
92	Deformation, crystal preferred orientations, and seismic anisotropy in the Earth's Dâ€³ layer. Earth and Planetary Science Letters, 2018, 492, 35-46.	4.4	15
93	Deformation, Annealing, Meltâ€Rock Interaction, and Seismic Properties of an Old Domain of the Equatorial Atlantic Lithospheric Mantle. Tectonics, 2019, 38, 1164-1188.	2.8	15
94	Interplay between Fluid Extraction Mechanisms and Antigorite Dehydration Reactions (Val Malenco,) Tj ETQq0 0 0 rgBT /Overlock 10 Tf	2.8	14
95	Microstructures, Water Contents, and Seismic Properties of the Mantle Lithosphere Beneath the Northern Limit of the Hangay Dome, Mongolia. Geochemistry, Geophysics, Geosystems, 2019, 20, 183-207.	2.5	14
96	Strain Localization in the Root of Detachment Faults at a Meltâ€Starved Midâ€Ocean Ridge: A Microstructural Study of Abyssal Peridotites From the Southwest Indian Ridge. Geochemistry, Geophysics, Geosystems, 2021, 22, e2020GC009434.	2.5	14
97	Crust-mantle coupling during continental convergence and break-up: Constraints from peridotite xenoliths from the Borborema Province, northeast Brazil. Tectonophysics, 2019, 766, 249-269.	2.2	13
98	Crystallographic Texture Evolution of a Zinc Sheet Subjected to Different Strain Paths. Metallurgical and Materials Transactions A: Physical Metallurgy and Materials Science, 2017, 48, 2858-2867.	2.2	12
99	Lateral and Vertical Heterogeneity in the Lithospheric Mantle at the Northern Margin of the Pannonian Basin Reconstructed From Peridotite Xenolith Microstructures. Journal of Geophysical Research: Solid Earth, 2019, 124, 6315-6336.	3.4	12
100	Flow in the western Mediterranean shallow mantle: Insights from xenoliths in Pliocene alkali basalts from SE Iberia (eastern Betics, Spain). Tectonics, 2016, 35, 2657-2676.	2.8	10
101	Microstructural evolution during thermal annealing of ice-Ih. Journal of Structural Geology, 2017, 99, 31-44.	2.3	10
102	Predicting viscoplastic anisotropy in the upper mantle: a comparison between experiments and polycrystal plasticity models. Physics of the Earth and Planetary Interiors, 2019, 286, 69-80.	1.9	10
103	Non-hydrostatic stress field orientation inferred from orthopyroxene (Pbca) to low-clinoenstatite (P21/c) inversion in partially dehydrated serpentinites. American Mineralogist, 2018, 103, 993-1001.	1.9	9
104	Textural and Compositional Changes in the Lithospheric Mantle Atop the Hawaiian Plume: Consequences for Seismic Properties. Geochemistry, Geophysics, Geosystems, 2020, 21, e2020GC009138.	2.5	9
105	Dynamic recrystallization by subgrain rotation in olivine revealed by electron backscatter diffraction. Tectonophysics, 2021, 815, 228916.	2.2	9
106	On the role of solute drag in reconciling laboratory and natural constraints on olivine grain growth kinetics. Geophysical Journal International, 2020, 224, 1360-1370.	2.4	8
107	Using thermo-mechanical models of subduction to constrain effective mantle viscosity. Earth and Planetary Science Letters, 2020, 539, 116243.	4.4	8
108	Microstructure and seismic properties of amphibole-rich rocks from the deep crust in southern Tibet. Tectonophysics, 2021, 811, 228869.	2.2	8

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109	Porphyroclasts: Source and Sink of Major and Trace Elements During Deformation-Induced Metasomatism (Finero, Ivrea-Verbano Zone, Italy). Geosciences (Switzerland), 2020, 10, 196.	2.2	7
110	How partial melting affects smallâ€scale convection in a plumeâ€fed sublithospheric layer beneath fastâ€moving plates. Geochemistry, Geophysics, Geosystems, 2015, 16, 3924-3945.	2.5	6
111	Interplay between melt infiltration and deformation in the deep lithospheric mantle (External Liguride) Tj ETQq1 1 0.784314 rgBT /Ov	1.4	6
112	Modeling strain and anisotropy along the Alpine Fault, South Island, New Zealand. Geophysical Monograph Series, 2007, , 289-305.	0.1	5
113	Comment on the article â€œProbability of radial anisotropy in the deep mantleâ€•by Visser et al. (2008) EPSL 270:241â€“250. Earth and Planetary Science Letters, 2008, 276, 223-225.	4.4	5
114	Olivine-induced viscous anisotropy in fossil strike-slip mantle shear zones and associated strain localization in the crust. Geophysical Journal International, 2020, 224, 608-625.	2.4	5
115	The SÃ£o Francisco cratonic root beneath the Neoproterozoic Brasilia belt (Brazil): Petrophysical data from kimberlite xenoliths. Tectonophysics, 2021, 816, 229011.	2.2	5
116	From dry to damp and stiff mantle lithosphere by reactive melt percolation atop the Hawaiian plume. Earth and Planetary Science Letters, 2021, 574, 117159.	4.4	3
117	Deformation of upper mantle rocks with contrasting initial fabrics in axial extension. Tectonophysics, 2021, 815, 228997.	2.2	2
118	Correction to â€œStrain-induced seismic anisotropy of wadsleyite polycrystals and flow patterns in the mantle transition zoneâ€• Journal of Geophysical Research, 2005, 110, .	3.3	1
119	Erratum to Eur. J. Mineral., 18, 149-160.. European Journal of Mineralogy, 2006, 18, 665-665.	1.3	1
120	Anhydrous Phase B: Transmission Electron Microscope Characterization and Elastic Properties. Geochemistry, Geophysics, Geosystems, 2019, 20, 4059-4072.	2.5	1
121	An effective parameterization of texture-induced viscous anisotropy in orthotropic materials with application for modeling geodynamical flows. , 0, , .		1
122	Shallow Mantle Composition and Dynamics: Fifth International Orogenic Lherzolite Conference: Foreword. Journal of Petrology, 2010, 51, 3-7.	2.8	0