Sylvain Barbot

List of Publications by Year
in descending order

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77 papers	4,056 citations	109137 35 h-index	123241 61 g-index
87 all docs	87 docs citations	87 times ranked	3106 citing authors

#	Article	IF	Citations
1	Automatic and Precise Orthorectification, Coregistration, and Subpixel Correlation of Satellite Images, Application to Ground Deformation Measurements. IEEE Transactions on Geoscience and Remote Sensing, 2007, 45, 1529-1558.	2.7	717
2	Seismic and geodetic evidence for extensive, long-lived fault damage zones. Geology, 2009, 37, 315-318.	2.0	222
3	Under the Hood of the Earthquake Machine: Toward Predictive Modeling of the Seismic Cycle. Science, 2012, 336, 707-710.	6.0	212
4	Postseismic deformation due to the M_w 6.0 2004 Parkfield earthquake: Stressâ€driven creep on a fault with spatially variable rateâ€andâ€state friction parameters. Journal of Geophysical Research, 2009, 114, .	3.3	178
5	A unified continuum representation of post-seismic relaxation mechanisms: semi-analytic models of afterslip, poroelastic rebound and viscoelastic flow. Geophysical Journal International, 2010, 182, 1124-1140.	1.0	159
6	The 2016 KaikÅura earthquake: Simultaneous rupture of the subduction interface and overlying faults. Earth and Planetary Science Letters, 2018, 482, 44-51.	1.8	107
7	Slow-slip, slow earthquakes, period-two cycles, full and partial ruptures, and deterministic chaos in a single asperity fault. Tectonophysics, 2019, 768, 228171.	0.9	95
8	The 2012 M_wâ€‰8.6 Wharton Basin sequence: A cascade of great earthquakes generated by nearâ€orthogonal, young, oceanic mantle faults. Journal of Geophysical Research: Solid Earth, 2015, 120, 3723-3747.	1.4	85
9	The mechanism of partial rupture of a locked megathrust: The role of fault morphology. Geology, 2016, 44, 875-878.	2.0	83
10	Space geodetic investigation of the coseismic and postseismic deformation due to the 2003 M_w7.2 Altai earthquake: Implications for the local lithospheric rheology. Journal of Geophysical Research, 2008, 113, .	3.3	81
11	The 2014 Mw 6.1 South Napa Earthquake: A Unilateral Rupture with Shallow Asperity and Rapid Afterslip. Seismological Research Letters, 2015, 86, 344-354.	0.8	78
12	Evidence for postseismic deformation of the lower crust following the 2004 Mw6.0 Parkfield earthquake. Journal of Geophysical Research, 2011, 116, .	3.3	76
13	The Parkfield tremors reveal slow and fast ruptures on the same asperity. Nature, 2016, 532, 361-365.	13.7	72
14	Imaging the distribution of transient viscosity after the 2016 M _w 7.1 Kumamoto earthquake. Science, 2017, 356, 163-167.	6.0	72
15	Fourier-domain Green's function for an elastic semi-infinite solid under gravity, with applications to earthquake and volcano deformation. Geophysical Journal International, 0, 182, 568-582.	1.0	71
16	Upper-mantle water stratification inferred from observations of the 2012 Indian Ocean earthquake. Nature, 2016, 538, 373-377.	13.7	69
17	Transient rheology of the Sumatran mantle wedge revealed by a decade of great earthquakes. Nature Communications, 2018, 9, 995.	5.8	69
18	Coseismic slip on shallow dÃ©collement megathrusts: implications for seismic and tsunami hazard. Earth-Science Reviews, 2015, 141, 45-55.	4.0	64

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19	The rise, collapse, and compaction of Mt. Mantap from the 3 September 2017 North Korean nuclear test. Science, 2018, 361, 166-170.	6.0	62
20	Rapid mantle flow with power-law creep explains deformation after the 2011 Tohoku mega-quake. Nature Communications, 2019, 10, 1385.	5.8	62
21	Along-strike variations of the partitioning of convergence across the Haiyuan fault system detected by InSAR. Geophysical Journal International, 2016, 205, 536-547.	1.0	61
22	Postseismic deformation following the 1999 Chiâ€Chi earthquake, Taiwan: Implication for lowerâ€crust rheology. Journal of Geophysical Research, 2012, 117, .	3.3	56
23	Interseismic Strain Localization in the San Jacinto Fault Zone. Pure and Applied Geophysics, 2014, 171, 2937-2954.	0.8	54
24	Contribution of viscoelastic flow in earthquake cycles within the lithosphereâ€asthenosphere system. Geophysical Research Letters, 2016, 43, 10,142.	1.5	54
25	Three-dimensional models of elastostatic deformation in heterogeneous media, with applications to the Eastern California Shear Zone. Geophysical Journal International, 2009, 179, 500-520.	1.0	50
26	Displacement and Stress Associated with Distributed Anelastic Deformation in a Halfâ€Space. Bulletin of the Seismological Society of America, 2017, 107, 821-855.	1.1	49
27	Asthenosphere Flow Modulated by Megathrust Earthquake Cycles. Geophysical Research Letters, 2018, 45, 6018-6031.	1.5	49
28	Coupled afterslip and transient mantle flow after the 2011 Tohoku earthquake. Science Advances, 2019, 5, eaaw1164.	4.7	48
29	Illuminating subduction zone rheological properties in the wake of a giant earthquake. Science Advances, 2019, 5, eaax6720.	4.7	47
30	Afterslip following the 2007 M_wÂ8.4 Bengkulu earthquake in Sumatra loaded the 2010 M_wÂ7.8 Mentawai tsunami earthquake rupture zone. Journal of Geophysical Research: Solid Earth, 2016, 121, 9034-9049.	1.4	45
31	Effect of a compliant fault zone on the inferred earthquake slip distribution. Journal of Geophysical Research, 2008, 113, .	3.3	44
32	Source characteristics of the 2015 MW 7.8 Gorkha (Nepal) earthquake and its MW 7.2 aftershock from space geodesy. Tectonophysics, 2017, 712-713, 747-758.	0.9	43
33	The Community Code Verification Exercise for Simulating Sequences of Earthquakes and Aseismic Slip (SEAS). Seismological Research Letters, 2020, 91, 874-890.	0.8	43
34	Modulation of fault strength during the seismic cycle by grain-size evolution around contact junctions. Tectonophysics, 2019, 765, 129-145.	0.9	41
35	Postseismic Deformation Following the 2010 $$M = 7.2$$ M = 7.2 El Mayor-Cucapah Earthquake: Observations, Kinematic Inversions, and Dynamic Models. Pure and Applied Geophysics, 2015, 172, 1305-1358.	0.8	40
36	Slow-slip events in semi-brittle serpentinite fault zones. Scientific Reports, 2018, 8, 6181.	1.6	37

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37	Frictional and structural controls of seismic super-cycles at the Japan trench. Earth, Planets and Space, 2020, 72, .	0.9	37
38	The discovery of a conjugate system of faults in the Wharton Basin intraplate deformation zone. Science Advances, 2017, 3, e1601689.	4.7	34
39	Lower-crustal rheology and thermal gradient in the Taiwan orogenic belt illuminated by the 1999 Chi-Chi earthquake. Science Advances, 2019, 5, eaav3287.	4.7	34
40	Structural control and system-level behavior of the seismic cycle at the Nankai Trough. Earth, Planets and Space, 2020, 72, .	0.9	33
41	Constraining the kinematics of metropolitan Los Angeles faults with a slipâ€partitioning model. Geophysical Research Letters, 2016, 43, 11192-11201.	1.5	29
42	Communityâ€Driven Code Comparisons for Threeâ€Dimensional Dynamic Modeling of Sequences of Earthquakes and Aseismic Slip. Journal of Geophysical Research: Solid Earth, 2022, 127, .	1.4	27
43	Change of apparent segmentation of the San Andreas fault around Parkfield from space geodetic observations across multiple periods. Journal of Geophysical Research: Solid Earth, 2013, 118, 6311-6327.	1.4	26
44	Dynamics of fault motion and the origin of contrasting tectonic style between Earth and Venus. Scientific Reports, 2018, 8, 11884.	1.6	25
45	Earthquake Cycles in Faultâ€Bend Folds. Journal of Geophysical Research: Solid Earth, 2020, 125, e2019JB018557.	1.4	25
46	A Spectral Boundary-Integral Method for Quasi-Dynamic Ruptures of Multiple Parallel Faults. Bulletin of the Seismological Society of America, 2021, 111, 1614-1630.	1.1	25
47	Constraints on Transient Viscoelastic Rheology of the Asthenosphere From Seasonal Deformation. Geophysical Research Letters, 2018, 45, 2328-2338.	1.5	24
48	Deformation of a Halfâ€Space from Anelastic Strain Confined in a Tetrahedral Volume. Bulletin of the Seismological Society of America, 2018, 108, 2687-2712.	1.1	22
49	Anisotropic high-temperature creep in hydrous olivine single crystals and its geodynamic implications. Physics of the Earth and Planetary Interiors, 2019, 290, 1-9.	0.7	20
50	Slip Complementarity and Triggering between the Foreshock, Mainshock, and Afterslip of the 2019 Ridgecrest Rupture Sequence. Bulletin of the Seismological Society of America, 2020, 110, 1701-1715.	1.1	19
51	Periodâ€Multiplying Cycles at the Transition Between Stickâ€Slip and Stable Sliding and Implications for the Parkfield Periodâ€Doubling Tremors. Geophysical Research Letters, 2021, 48, e2020GL091807.	1.5	19
52	Piecemeal Rupture of the Mentawai Patch, Sumatra: The 2008 M_w 7.2 North Pagai Earthquake Sequence. Journal of Geophysical Research: Solid Earth, 2017, 122, 9404-9419.	1.4	18
53	Excitation of San Andreas tremors by thermal instabilities below the seismogenic zone. Science Advances, 2020, 6, .	4.7	18
54	Bifurcations at the Stability Transition of Earthquake Faulting. Geophysical Research Letters, 2020, 47, e2020GL087985.	1.5	17

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55	Physics-Based Scenario of Earthquake Cycles on the Ventura Thrust System, California: The Effect of Variable Friction and Fault Geometry. Pure and Applied Geophysics, 2019, 176, 3993-4007.	0.8	16
56	The stop-start control of seismicity by fault bends along the Main Himalayan Thrust. Communications Earth & Environment, 2021, 2, .	2.6	16
57	Spatially variable fault friction derived from dynamic modeling of aseismic afterslip due to the 2004 Parkfield earthquake. Journal of Geophysical Research: Solid Earth, 2013, 118, 3431-3447.	1.4	15
58	Footprints of past earthquakes revealed in the afterslip of the 2010 M_w 7.8 Mentawai tsunami earthquake. Geophysical Research Letters, 2016, 43, 9518-9526.	1.5	15
59	Mantle flow distribution beneath the California margin. Nature Communications, 2020, 11, 4456.	5.8	15
60	Rupture styles linked to recurrence patterns in seismic cycles with a compliant fault zone. Earth and Planetary Science Letters, 2022, 591, 117593.	1.8	15
61	Connecting subduction, extension and shear localization across the Aegean Sea and Anatolia. Geophysical Journal International, 2021, 226, 422-445.	1.0	14
62	Tsunami excitation in the outer wedge of global subduction zones. Earth-Science Reviews, 2022, 230, 104054.	4.0	14
63	Seismogenic and tremorgenic slow slip near the stability transition of frictional sliding. Earth and Planetary Science Letters, 2021, 569, 117037.	1.8	13
64	Extending Resolution of Fault Slip With Geodetic Networks Through Optimal Network Design. Journal of Geophysical Research: Solid Earth, 2017, 122, 10,538.	1.4	11
65	Interseismic Strain Accumulation on Faults Beneath Los Angeles, California. Journal of Geophysical Research: Solid Earth, 2018, 123, 7126.	1.4	11
66	Heterogeneous Powerâ€Law Flow With Transient Creep in Southern California Following the 2010 El Mayorâ€Cucapah Earthquake. Journal of Geophysical Research: Solid Earth, 2020, 125, e2020JB019740.	1.4	10
67	Outlier-insensitive Bayesian inference for linear inverse problems (OutIBI) with applications to space geodetic data. Geophysical Journal International, 2020, 221, 334-350.	1.0	9
68	Experimental evidence for multiple controls on fault stability and rupture dynamics. Earth and Planetary Science Letters, 2022, 577, 117252.	1.8	9
69	MCMC inversion of the transient and steady-state creep flow law parameters of dunite under dry and wet conditions. Earth, Planets and Space, 2021, 73, .	0.9	7
70	Gamra: Simple meshing for complex earthquakes. Computers and Geosciences, 2016, 90, 49-63.	2.0	5
71	Static Source Properties of Slow and Fast Earthquakes. Journal of Geophysical Research: Solid Earth, 2020, 125, e2019JB019028.	1.4	5
72	Fast, accurate solutions for 3D strain volumes in a heterogeneous half space. Computers and Geosciences, 2019, 125, 109-114.	2.0	4

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73	Relax-Miracle: GPU parallelization of semi-analytic fourier-domain solvers for earthquake modeling. , 2014, , .		1
74	Phase unwrapping for DEM generation as an inverse problem. , 0, , .		0
75	Limits of FPGA acceleration of 3D Green's Function computation for geophysical applications. , 2015, , .		0
76	Physics of Megathrust Earthquakes: Introduction. Pure and Applied Geophysics, 2019, 176, 3813-3814.	0.8	0
77	Quasi-static Simulation Method of Earthquake Cycles Based on Viscoelastic Finite Element Modeling. Mathematics for Industry, 2020, , 159-169.	0.4	0