

Boris J P Kaus

List of Publications by Year in descending order

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89
papers

4,990
citations

117625

34
h-index

95266

68
g-index

150
all docs

150
docs citations

150
times ranked

3556
citing authors

#	ARTICLE	IF	CITATIONS
1	Slow Geodynamics and Fast Morphotectonics in the Far East Tethys. <i>Geochemistry, Geophysics, Geosystems</i> , 2022, 23, .	2.5	10
2	Self-replicating subduction zone initiation by polarity reversal. <i>Communications Earth & Environment</i> , 2022, 3, .	6.8	9
3	Quantification of Volcano Deformation Caused by Volatile Accumulation and Release. <i>Geophysical Research Letters</i> , 2022, 49, .	4.0	2
4	Geodynamic Modeling With Uncertain Initial Geometries. <i>Geochemistry, Geophysics, Geosystems</i> , 2022, 23, .	2.5	1
5	Dynamic pressure variations in the lower crust caused by localized fluid-induced weakening. <i>Communications Earth & Environment</i> , 2022, 3, .	6.8	10
6	MAGEMin, an Efficient Gibbs Energy Minimizer: Application to Igneous Systems. <i>Geochemistry, Geophysics, Geosystems</i> , 2022, 23, .	2.5	9
7	Subductionâ€Induced Backâ€Arc Extension Versus Farâ€Field Stretching: Contrasting Modes for Continental Marginal Breakâ€Up. <i>Geochemistry, Geophysics, Geosystems</i> , 2021, 22, e2020GC009416.	2.5	23
8	A Multiphysics Approach to Constrain the Dynamics of the Altiplanoâ€Puna Magmatic System. <i>Journal of Geophysical Research: Solid Earth</i> , 2021, 126, e2021JB021725.	3.4	12
9	3D Geodynamic Models for HPâ€UHP Rock Exhumation in Oppositeâ€Dip Double Subductionâ€Collision Systems. <i>Journal of Geophysical Research: Solid Earth</i> , 2021, 126, e2021JB022326.	3.4	5
10	Investigating the effects of intersection flow localization in equivalent-continuum-based upscaling of flow in discrete fracture networks. <i>Solid Earth</i> , 2021, 12, 2235-2254.	2.8	9
11	Subduction Polarity Reversal Triggered by Oceanic Plateau Accretion: Implications for Induced Subduction Initiation. <i>Geophysical Research Letters</i> , 2021, 48, e2021GL095299.	4.0	23
12	An autonomous petrological database for geodynamic simulations of magmatic systems. <i>Geophysical Journal International</i> , 2020, 223, 1820-1836.	2.4	4
13	Inferring rheology and geometry of subsurface structures by adjoint-based inversion of principal stress directions. <i>Geophysical Journal International</i> , 2020, 223, 851-861.	2.4	9
14	Lower Crustal Rheology Controls the Development of Large Offset Strikeâ€Slip Faults During the Himalayanâ€Tibetan Orogeny. <i>Geophysical Research Letters</i> , 2020, 47, e2020GL089435.	4.0	20
15	Plume â€Lid interactions during the Archean and implications for the generation of early continental terranes. <i>Gondwana Research</i> , 2020, 88, 150-168.	6.0	21
16	Insights into the Compositional Evolution of Crustal Magmatic Systems from Coupled Petrological-Geodynamical Models. <i>Journal of Petrology</i> , 2020, 61, .	2.8	13
17	Control of 3-D tectonic inheritance on fold-and-thrust belts: insights from 3-D numerical models and application to the Helvetic nappe system. <i>Solid Earth</i> , 2020, 11, 999-1026.	2.8	8
18	The hydraulic efficiency of single fractures: correcting the cubic law parameterization for self-affine surface roughness and fracture closure. <i>Solid Earth</i> , 2020, 11, 947-957.	2.8	8

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19	The Impact of a Very Weak and Thin Upper Asthenosphere on Subduction Motions. <i>Geophysical Research Letters</i> , 2019, 46, 11893-11905.	4.0	5
20	Mountain Building in Taiwan: Insights From 3D Geodynamic Models. <i>Journal of Geophysical Research: Solid Earth</i> , 2019, 124, 5924-5950.	3.4	7
21	Generation of Earth's Early Continents From a Relatively Cool Archean Mantle. <i>Geochemistry, Geophysics, Geosystems</i> , 2019, 20, 1679-1697.	2.5	31
22	Pore-scale permeability prediction for Newtonian and non-Newtonian fluids. <i>Solid Earth</i> , 2019, 10, 1717-1731.	2.8	15
23	Effect of pressure and temperature on viscosity of a borosilicate glass. <i>Journal of the American Ceramic Society</i> , 2018, 101, 3936-3946.	3.8	15
24	Coupled petrological-geodynamical modeling of a compositionally heterogeneous mantle plume. <i>Tectonophysics</i> , 2018, 723, 242-260.	2.2	8
25	The effect of rheological approximations in 3-D numerical simulations of subduction and collision. <i>Tectonophysics</i> , 2018, 746, 296-311.	2.2	19
26	Slab-triggered wet upwellings produce large volumes of melt: Insights into the destruction of the North China Craton. <i>Tectonophysics</i> , 2018, 746, 266-279.	2.2	23
27	Deriving scaling laws in geodynamics using adjoint gradients. <i>Tectonophysics</i> , 2018, 746, 352-363.	2.2	9
28	Unraveling the Physics of the Yellowstone Magmatic System Using Geodynamic Simulations. <i>Frontiers in Earth Science</i> , 2018, 6, .	1.8	16
29	Development of branching brittle and ductile shear zones: A numerical study. <i>Geochemistry, Geophysics, Geosystems</i> , 2017, 18, 2054-2075.	2.5	17
30	Subduction metamorphism in the Himalayan ultrahigh-pressure Tso Moriri massif: An integrated geodynamic and petrological modelling approach. <i>Earth and Planetary Science Letters</i> , 2017, 467, 108-119.	4.4	52
31	On the Quality of Velocity Interpolation Schemes for Marker-in-Cell Method and Staggered Grids. <i>Pure and Applied Geophysics</i> , 2017, 174, 1071-1089.	1.9	44
32	Mixing instabilities during shearing of metals. <i>Nature Communications</i> , 2017, 8, 1611.	12.8	92
33	Comparison of continuous and discontinuous Galerkin approaches for variable-viscosity Stokes flow. <i>ZAMM Zeitschrift Fur Angewandte Mathematik Und Mechanik</i> , 2016, 96, 733-746.	1.6	4
34	Modeling of wind gap formation and development of sedimentary basins during fold growth: application to the Zagros Fold Belt, Iran. <i>Earth Surface Processes and Landforms</i> , 2016, 41, 1521-1535.	2.5	23
35	Benchmarking numerical models of brittle thrust wedges. <i>Journal of Structural Geology</i> , 2016, 92, 140-177.	2.3	81
36	Nonlithostatic pressure during subduction and collision and the formation of (ultra)high-pressure rocks. <i>Geology</i> , 2016, 44, 343-346.	4.4	45

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37	Constraining lithospheric flow. <i>Science</i> , 2016, 353, 1495-1496.	12.6	1
38	Intrusion of granitic magma into the continental crust facilitated by magma pulsing and dikeâ€diapir interactions: Numerical simulations. <i>Tectonics</i> , 2016, 35, 1575-1594.	2.8	69
39	Speculations on the impact of catastrophic subduction initiation on the Earth System. <i>Journal of Geodynamics</i> , 2016, 93, 1-16.	1.6	9
40	Geodynamic inversion to constrain the non-linear rheology of the lithosphere. <i>Geophysical Journal International</i> , 2015, 202, 1289-1316.	2.4	64
41	Influence of surface processes and initial topography on lateral fold growth and fold linkage mode. <i>Tectonics</i> , 2015, 34, 1622-1645.	2.8	20
42	Lithospheric stresses in Rayleighâ€BÃ©nard convection: effects of a free surface and a viscoelastic Maxwell rheology. <i>Geophysical Journal International</i> , 2015, 203, 2200-2219.	2.4	16
43	Intermediate-depth earthquake generation and shear zone formation caused by grain size reduction and shear heating. <i>Geology</i> , 2015, 43, 791-794.	4.4	66
44	Pattern formation in 3-D numerical models of down-built diapirs initiated by a Rayleighâ€Taylor instability. <i>Geophysical Journal International</i> , 2015, 202, 1253-1270.	2.4	16
45	Development of topography in 3â€D continentalâ€collision models. <i>Geochemistry, Geophysics, Geosystems</i> , 2015, 16, 1378-1400.	2.5	52
46	Selfâ€consistent subduction initiation induced by mantle flow. <i>Terra Nova</i> , 2015, 27, 130-138.	2.1	57
47	Strong intracontinental lithospheric deformation in South China: Implications from seismic observations and geodynamic modeling. <i>Journal of Asian Earth Sciences</i> , 2014, 86, 106-116.	2.3	15
48	Delamination and recycling of Archaean crust caused by gravitational instabilities. <i>Nature Geoscience</i> , 2014, 7, 47-52.	12.9	358
49	Quantifying the impact of mechanical layering and underthrusting on the dynamics of the modern Indiaâ€Asia collisional system with 3â€D numerical models. <i>Journal of Geophysical Research: Solid Earth</i> , 2014, 119, 616-644.	3.4	18
50	Influence of pre-existing salt diapirs on 3D folding patterns. <i>Tectonophysics</i> , 2014, 637, 354-369.	2.2	17
51	Influences of surface processes on fold growth during 3â€D detachment folding. <i>Geochemistry, Geophysics, Geosystems</i> , 2014, 15, 3281-3303.	2.5	20
52	Fold interaction and wavelength selection in 3D models of multilayer detachment folding. <i>Tectonophysics</i> , 2014, 632, 199-217.	2.2	32
53	Discretization Errors in the Hybrid Finite Element Particle-in-cell Method. <i>Pure and Applied Geophysics</i> , 2014, 171, 2165-2184.	1.9	20
54	Constraining effective rheology through parallel joint geodynamic inversion. <i>Tectonophysics</i> , 2014, 631, 197-211.	2.2	56

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55	Heating glaciers from below. <i>Nature Geoscience</i> , 2013, 6, 683-684.	12.9	3
56	Numerical modelling of magma dynamics coupled to tectonic deformation of lithosphere and crust. <i>Geophysical Journal International</i> , 2013, 195, 1406-1442.	2.4	152
57	The role of slabs and oceanic plate geometry in the net rotation of the lithosphere, trench motions, and slab return flow. <i>Geochemistry, Geophysics, Geosystems</i> , 2012, 13, .	2.5	26
58	A free plate surface and weak oceanic crust produce single-sided subduction on Earth. <i>Geophysical Research Letters</i> , 2012, 39, .	4.0	147
59	Numerical investigation of deformation mechanics in fold-and-thrust belts: Influence of rheology of single and multiple décollements. <i>Tectonics</i> , 2012, 31, .	2.8	124
60	Thermomechanical modeling of slab education. <i>Journal of Geophysical Research</i> , 2012, 117, .	3.3	58
61	Shear heating induced lithospheric-scale localization: Does it result in subduction?. <i>Earth and Planetary Science Letters</i> , 2012, 359-360, 1-13.	4.4	119
62	A comparison of numerical surface topography calculations in geodynamic modelling: an evaluation of the "sticky air" method. <i>Geophysical Journal International</i> , 2012, 189, 38-54.	2.4	301
63	Potential causes for the non-Newtonian rheology of crystal-bearing magmas. <i>Geochemistry, Geophysics, Geosystems</i> , 2011, 12, .	2.5	37
64	Sedimentology of early Pliocene sandstones in the south-western Taiwan foreland: Implications for basin physiography in the early stages of collision. <i>Journal of Asian Earth Sciences</i> , 2011, 40, 52-71.	2.3	24
65	Thermal localization as a potential mechanism to rift cratons. <i>Physics of the Earth and Planetary Interiors</i> , 2011, 186, 125-137.	1.9	26
66	Comparing thin-sheet models with 3-D multilayer models for continental collision. <i>Geophysical Journal International</i> , 2011, 187, 10-33.	2.4	33
67	Indentation as an extrusion mechanism of lower crustal rocks: Insight from analogue and numerical modelling, application to the Eastern Bohemian Massif. <i>Lithos</i> , 2011, 124, 158-168.	1.4	21
68	Dynamic constraints on the crustal-scale rheology of the Zagros fold belt, Iran. <i>Geology</i> , 2011, 39, 815-818.	4.4	66
69	Parameters that control lithospheric-scale thermal localization on terrestrial planets. <i>Geophysical Research Letters</i> , 2010, 37, .	4.0	41
70	Direct numerical simulation of two-phase flow: Effective rheology and flow patterns of particle suspensions. <i>Earth and Planetary Science Letters</i> , 2010, 290, 1-12.	4.4	15
71	A stabilization algorithm for geodynamic numerical simulations with a free surface. <i>Physics of the Earth and Planetary Interiors</i> , 2010, 181, 12-20.	1.9	140
72	Factors that control the angle of shear bands in geodynamic numerical models of brittle deformation. <i>Tectonophysics</i> , 2010, 484, 36-47.	2.2	109

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73	Lithospheric stress-states predicted from long-term tectonic models: Influence of rheology and possible application to Taiwan. <i>Journal of Asian Earth Sciences</i> , 2009, 36, 119-134.	2.3	24
74	Rheological controls on the terrestrial core formation mechanism. <i>Geochemistry, Geophysics, Geosystems</i> , 2009, 10, .	2.5	18
75	Stress-strength relationship in the lithosphere during continental collision. <i>Geology</i> , 2009, 37, 775-778.	4.4	50
76	From passive continental margin to mountain belt: Insights from analytical and numerical models and application to Taiwan. <i>Physics of the Earth and Planetary Interiors</i> , 2008, 171, 235-251.	1.9	89
77	Comparison of Eulerian and Lagrangian numerical techniques for the Stokes equations in the presence of strongly varying viscosity. <i>Physics of the Earth and Planetary Interiors</i> , 2008, 171, 92-111.	1.9	96
78	A benchmark comparison of spontaneous subduction modelsâ€”Towards a free surface. <i>Physics of the Earth and Planetary Interiors</i> , 2008, 171, 198-223.	1.9	361
79	Recent advances in computational geodynamics: Theory, numerics and applications. <i>Physics of the Earth and Planetary Interiors</i> , 2008, 171, 2-6.	1.9	3
80	The mechanics of continental transforms: An alternative approach with applications to the San Andreas system and the tectonics of California. <i>Earth and Planetary Science Letters</i> , 2008, 274, 380-391.	4.4	17
81	Effects of elasticity on the Rayleigh-Taylor instability: implications for large-scale geodynamics. <i>Geophysical Journal International</i> , 2007, 168, 843-862.	2.4	88
82	Initiation of localized shear zones in viscoelastoplastic rocks. <i>Journal of Geophysical Research</i> , 2006, 111, .	3.3	141
83	3D finite amplitude folding: Implications for stress evolution during crustal and lithospheric deformation. <i>Geophysical Research Letters</i> , 2006, 33, .	4.0	72
84	The numerical sandbox: comparison of model results for a shortening and an extension experiment. <i>Geological Society Special Publication</i> , 2006, 253, 29-64.	1.3	84
85	Effect of mineral phase transitions on sedimentary basin subsidence and uplift. <i>Earth and Planetary Science Letters</i> , 2005, 233, 213-228.	4.4	93
86	Dome structures in collision orogens: Mechanical investigation of the gravity/compression interplay. , 2004, , .		33
87	Aftershocks driven by a high-pressure CO2 source at depth. <i>Nature</i> , 2004, 427, 724-727.	27.8	714
88	Forward and reverse modeling of the three-dimensional viscous Rayleigh-Taylor instability. <i>Geophysical Research Letters</i> , 2001, 28, 1095-1098.	4.0	54
89	Simulating fluid injection in geological media with complex rheologies. <i>IOP Conference Series: Earth and Environmental Science</i> , 0, 249, 012005.	0.3	0