Eric Larour

List of Publications by Year
in descending order

78 papers	4,818 citations	81900 39 h-index	102487 66 g-index
85 all docs	85 docs citations	85 times ranked	2948 citing authors

#	Article	IF	Citations
1	Continental scale, high order, high spatial resolution, ice sheet modeling using the Ice Sheet System Model (ISSM). Journal of Geophysical Research, 2012, 117, .	3.3	311
2	Spatial patterns of basal drag inferred using control methods from a fullâ€Stokes and simpler models for Pine Island Glacier, West Antarctica. Geophysical Research Letters, 2010, 37, .	4.0	286
3	Deeply incised submarine glacial valleys beneath the Greenland ice sheet. Nature Geoscience, 2014, 7, 418-422.	12.9	209
4	Projected land ice contributions to twenty-first-century sea level rise. Nature, 2021, 593, 74-82.	27.8	200
5	Ice Sheet Model Intercomparison Project (ISMIP6) contribution to CMIP6. Geoscientific Model Development, 2016, 9, 4521-4545.	3.6	199
6	ISMIP6 Antarctica: a multi-model ensemble of the Antarctic ice sheet evolution over the 21st century. Cryosphere, 2020, 14, 3033-3070.	3.9	198
7	Grounding-line migration in plan-view marine ice-sheet models: results of the ice2sea MISMIP3d intercomparison. Journal of Glaciology, 2013, 59, 410-422.	2.2	179
8	A mass conservation approach for mapping glacier ice thickness. Geophysical Research Letters, 2011, 38, n/a-n/a.	4.0	170
9	Continued retreat of Thwaites Glacier, West Antarctica, controlled by bed topography and ocean circulation. Geophysical Research Letters, 2017, 44, 6191-6199.	4.0	153
10	The future sea-level contribution of the Greenland ice sheet: a multi-model ensemble study of ISMIP6. Cryosphere, 2020, 14, 3071-3096.	3.9	144
11	GIA Model Statistics for GRACE Hydrology, Cryosphere, and Ocean Science. Geophysical Research Letters, 2018, 45, 2203-2212.	4.0	137
12	Inversion of basal friction in Antarctica using exact and incomplete adjoints of a higherâ€order model. Journal of Geophysical Research F: Earth Surface, 2013, 118, 1746-1753.	2.8	120
13	Dependence of century-scale projections of the Greenland ice sheet on its thermal regime. Journal of Glaciology, 2013, 59, 1024-1034.	2.2	111
14	Ice flux divergence anomalies on 79north Glacier, Greenland. Geophysical Research Letters, 2011, 38, .	4.0	101
15	Modeling of Store Gletscher's calving dynamics, West Greenland, in response to ocean thermal forcing. Geophysical Research Letters, 2016, 43, 2659-2666.	4.0	99
16	Design and results of the ice sheet model initialisation experiments initMIP-Greenland: an ISMIP6 intercomparison. Cryosphere, 2018, 12, 1433-1460.	3.9	89
17	A damage mechanics assessment of the Larsen B ice shelf prior to collapse: Toward a physicallyâ€based calving law. Geophysical Research Letters, 2012, 39, .	4.0	84
18	Hydrostatic grounding line parameterization in ice sheet models. Cryosphere, 2014, 8, 2075-2087.	3.9	83

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19	Rheology of the Ronne Ice Shelf, Antarctica, inferred from satellite radar interferometry data using an inverse control method. Geophysical Research Letters, 2005, 32, .	4.0	81
20	Insights into spatial sensitivities of ice mass response to environmental change from the SeaRISE ice sheet modeling project II: Greenland. Journal of Geophysical Research F: Earth Surface, 2013, 118, 1025-1044.	2.8	79
21	Understanding of Contemporary Regional Seaâ€Level Change and the Implications for the Future. Reviews of Geophysics, 2020, 58, e2019RG000672.	23.0	74
22	Experimental protocol for sea level projections from ISMIP6 stand-alone ice sheet models. Cryosphere, 2020, 14, 2331-2368.	3.9	72
23	Larsen B Ice Shelf rheology preceding its disintegration inferred by a control method. Geophysical Research Letters, 2007, 34, .	4.0	70
24	Roles of marine ice, rheology, and fracture in the flow and stability of the Brunt/Stancombâ€Wills Ice Shelf. Journal of Geophysical Research, 2009, 114, .	3.3	69
25	initMIP-Antarctica: an ice sheet model initialization experiment of ISMIP6. Cryosphere, 2019, 13, 1441-1471.	3.9	69
26	Insights into spatial sensitivities of ice mass response to environmental change from the SeaRISE ice sheet modeling project I: Antarctica. Journal of Geophysical Research F: Earth Surface, 2013, 118, 1002-1024.	2.8	63
27	Sensitivity of the dynamics of Pine Island Glacier, West Antarctica, to climate forcing for the next 50 years. Cryosphere, 2014, 8, 1699-1710.	3.9	58
28	A constitutive framework for predicting weakening and reduced buttressing of ice shelves based on observations of the progressive deterioration of the remnant Larsen B Ice Shelf. Geophysical Research Letters, 2016, 43, 2027-2035.	4.0	58
29	Slowdown in Antarctic mass loss from solid Earth and sea-level feedbacks. Science, 2019, 364, .	12.6	56
30	Inferred basal friction and surface mass balance of the Northeast Greenland Ice Stream using data assimilation of ICESat (Ice Cloud and land Elevation Satellite) surface altimetry and ISSM (Ice Sheet) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 5	3.3	56
31	Modelling of rift propagation on Ronne Ice Shelf, Antarctica, and sensitivity to climate change. Geophysical Research Letters, 2004, 31, .	4.0	54
32	Rate of mass loss from the Greenland Ice Sheet will exceed Holocene values this century. Nature, 2020, 586, 70-74.	27.8	53
33	Exploration of Antarctic Ice Sheet 100-year contribution to sea level rise and associated model uncertainties using the ISSM framework. Cryosphere, 2018, 12, 3511-3534.	3.9	52
34	Ice flow sensitivity to geothermal heat flux of Pine Island Glacier, Antarctica. Journal of Geophysical Research, 2012, 117, .	3.3	51
35	Modelling calving front dynamics using a level-set method: application to Jakobshavn IsbrÃ¦, West Greenland. Cryosphere, 2016, 10, 497-510.	3.9	51
36	The mechanisms behind Jakobshavn IsbrÃ¦'s acceleration and mass loss: A 3â€D thermomechanical model study. Geophysical Research Letters, 2017, 44, 6252-6260.	4.0	49

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37	High-resolution bed topography mapping of Russell Glacier, Greenland, inferred from Operation IceBridge data. Journal of Glaciology, 2013, 59, 1015-1023.	2.2	47
38	Plastic bed beneath HofsjÃ¶kull Ice Cap, central Iceland, and the sensitivity of ice flow to surface meltwater flux. Journal of Glaciology, 2016, 62, 147-158.	2.2	46
39	ISSM-SESAW v1.0: mesh-based computation of gravitationally consistent sea-level and geodetic signatures caused by cryosphere and climate driven mass change. Geoscientific Model Development, 2016, 9, 1087-1109.	3.6	43
40	Coastline extraction from repeat high resolution satellite imagery. Remote Sensing of Environment, 2019, 229, 260-270.	11.0	43
41	Acceleration and spatial rheology of Larsen C Ice Shelf, Antarctic Peninsula. Geophysical Research Letters, 2011, 38, .	4.0	42
42	What drives 20th century polar motion?. Earth and Planetary Science Letters, 2018, 502, 126-132.	4.4	40
43	Calving Front Machine (CALFIN): glacial termini dataset and automated deep learning extraction method for Greenland, 1972â€“2019. Cryosphere, 2021, 15, 1663-1675.	3.9	38
44	Mass transport waves amplified by intense Greenland melt and detected in solid Earth deformation. Geophysical Research Letters, 2017, 44, 4965-4975.	4.0	37
45	Sensitivity Analysis of Pine Island Glacier ice flow using ISSM and DAKOTA. Journal of Geophysical Research, 2012, 117, .	3.3	35
46	Processes involved in the propagation of rifts near Hemmen Ice Rise, Ronne Ice Shelf, Antarctica. Journal of Glaciology, 2004, 50, 329-341.	2.2	32
47	Future Antarctic bed topography and its implications for ice sheet dynamics. Solid Earth, 2014, 5, 569-584.	2.8	30
48	Should coastal planners have concern over where land ice is melting?. Science Advances, 2017, 3, e1700537.	10.3	29
49	Future Sea Level Change Under Coupled Model Intercomparison Project Phase 5 and Phase 6 Scenarios From the Greenland and Antarctic Ice Sheets. Geophysical Research Letters, 2021, 48, e2020GL091741.	4.0	28
50	High-resolution ice-thickness mapping in South Greenland. Annals of Glaciology, 2014, 55, 64-70.	1.4	27
51	Ice discharge uncertainties in Northeast Greenland from boundary conditions and climate forcing of an ice flow model. Journal of Geophysical Research F: Earth Surface, 2015, 120, 29-54.	2.8	27
52	Decadalâ€scale sensitivity of Northeast Greenland ice flow to errors inâ€‰surface mass balance using ISSM. Journal of Geophysical Research F: Earth Surface, 2013, 118, 667-680.	2.8	23
53	A linear viscoelasticity for decadal to centennial time scale mantle deformation. Reports on Progress in Physics, 2020, 83, 106801.	20.1	23
54	The impact of model resolution on the simulated Holocene retreat of the southwestern Greenland ice sheet using the Ice Sheet System Model (ISSM). Cryosphere, 2019, 13, 879-893.	3.9	22

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55	Coupling ice flow models of varying orders of complexity with the Tiling method. Journal of Glaciology, 2012, 58, 776-786.	2.2	21
56	Application of GRACE to the assessment of model-based estimates of monthly Greenland Ice Sheet mass balanceÂ(2003â€"2012). Cryosphere, 2016, 10, 1965-1989.	3.9	21
57	Decadal to Centennial Timescale Mantle Viscosity Inferred From Modern Crustal Uplift Rates in Greenland. Geophysical Research Letters, 2021, 48, e2021GL094040.	4.0	20
58	Implementation of higher-order vertical finite elements in ISSM v4.13 for improved ice sheet flow modeling over paleoclimate timescales. Geoscientific Model Development, 2018, 11, 1683-1694.	3.6	16
59	Physical processes controlling the rifting of Larsen C Ice Shelf, Antarctica, prior to the calving of iceberg A68. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	16
60	Greenland Ice Sheet seasonal and spatial mass variability from model simulations and GRACE (2003â€"2012). Cryosphere, 2016, 10, 1259-1277.	3.9	14
61	Simulating ice thickness and velocity evolution of Upernavik IsstrÃ¸m 1849â€"2012 by forcing prescribed terminus positions in ISSM. Cryosphere, 2018, 12, 1511-1522.	3.9	13
62	Representation of sharp rifts and faults mechanics in modeling ice shelf flow dynamics: Application to Brunt/Stancombâ€Wills Ice Shelf, Antarctica. Journal of Geophysical Research F: Earth Surface, 2014, 119, 1918-1935.	2.8	12
63	Notes on a compressible extended Burgers model of rheology. Geophysical Journal International, 2021, 228, 1975-1991.	2.4	11
64	Carbon Dioxide Ice Glaciers at the South Pole of Mars. Journal of Geophysical Research E: Planets, 2022, 127, .	3.6	10
65	An approach to computing discrete adjoints for MPI-parallelized models applied to Ice Sheet System Model 4.11. Geoscientific Model Development, 2016, 9, 3907-3918.	3.6	8
66	A Multidisciplinary Perspective on Climate Model Evaluation For Antarctica. Bulletin of the American Meteorological Society, 2016, 97, ES23-ES26.	3.3	7
67	A usability case study of algorithmic differentiation tools on the ISSM ice sheet model. Optimization Methods and Software, 2018, 33, 844-867.	2.4	6
68	Quantification of Surface Forcing Requirements for a Greenland Ice Sheet Model Using Uncertainty Analyses. Geophysical Research Letters, 2019, 46, 9700-9709.	4.0	6
69	On ISSM and leveraging the Cloud towards faster quantification of the uncertainty in ice-sheet mass balance projections. Computers and Geosciences, 2016, 96, 193-201.	4.2	5
70	Optimal numerical solvers for transient simulations of ice flow using the Ice Sheet System Model (ISSM versions 4.2.5 and 4.11). Geoscientific Model Development, 2017, 10, 155-168.	3.6	5
71	Crevasse Propagation on Brittle Ice: Application to Cycloids on Europa. Geophysical Research Letters, 2019, 46, 11756-11763.	4.0	4
72	A kinematic formalism for tracking iceâ€"ocean mass exchange on the Earth's surface and estimating sea-level change. Cryosphere, 2020, 14, 2819-2833.	3.9	4

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73	ISSM-SLPS: geodetically compliant Sea-Level Projection System for the Ice-sheet and Sea-level System Model v4.17. Geoscientific Model Development, 2020, 13, 4925-4941.	3.6	4
74	Derivation of bedrock topography measurement requirements for the reduction of uncertainty in ice-sheet model projections of Thwaites Glacier. Cryosphere, 2022, 16, 761-778.	3.9	3
75	A JavaScript API for the Ice Sheet System Model (ISSM) 4.11: towards an online interactive model for the cryosphere community. Geoscientific Model Development, 2017, 10, 4393-4403.	3.6	2
76	Toward Improved Understanding of Changes in Greenland Outlet Glacier Shear Margin Dynamics in a Warming Climate. Frontiers in Earth Science, 2018, 6, .	1.8	2
77	Implementation of a Gaussian Markov random field sampler for forward uncertainty quantification in the Ice-sheet and Sea-level System Model v4.19. Geoscientific Model Development, 2022, 15, 1195-1217.	3.6	1
78	Modeling the Evolution of Polar Ice Sheets. Eos, 2014, 95, 411-411.	0.1	0