Jeffrey P Severinghaus

List of Publications by Year
in descending order

106 papers	7,163 citations	61945 43 h-index	60583 81 g-index
145 all docs	145 docs citations	145 times ranked	5955 citing authors

#	Article	IF	Citations
1	Timing of abrupt climate change at the end of the Younger Dryas interval from thermally fractionated gases in polar ice. Nature, 1998, 391, 141-146.	13.7	639
2	Abrupt Climate Change at the End of the Last Glacial Period Inferred from Trapped Air in Polar Ice. Science, 1999, 286, 930-934.	6.0	506
3	Northern Hemisphere forcing of climatic cycles in Antarctica over the past 360,000â€‰years. Nature, 2007, 448, 912-916.	13.7	442
4	Consistently dated records from the Greenland GRIP, GISP2 and NGRIP ice cores for the past 104Âka reveal regional millennial-scale Î´18O gradients with possible Heinrich event imprint. Quaternary Science Reviews, 2014, 106, 29-46.	1.4	275
5	A record of atmospheric halocarbons during the twentieth century from polar firn air. Nature, 1999, 399, 749-755.	13.7	235
6	Greenland temperature response to climate forcing during the last deglaciation. Science, 2014, 345, 1177-1180.	6.0	226
7	Timing of Atmospheric CO2 and Antarctic Temperature Changes Across Termination III. Science, 2003, 299, 1728-1731.	6.0	215
8	Precise timing and characterization of abrupt climate change 8200 years ago from air trapped in polar ice. Quaternary Science Reviews, 2007, 26, 1212-1222.	1.4	213
9	The WAIS Divide deep ice core WD2014 chronology â€“ Part 1: Methane synchronization (68â€“31 ka BP) and the gas ageâ€“ice age difference. Climate of the Past, 2015, 11, 153-173.	1.3	172
10	Preindustrial 14CH4 indicates greater anthropogenic fossil CH4 emissions. Nature, 2020, 578, 409-412.	13.7	172
11	Oxygen-18 of O ₂ Records the Impact of Abrupt Climate Change on the Terrestrial Biosphere. Science, 2009, 324, 1431-1434.	6.0	152
12	A first chronology for the North Greenland Eemian Ice Drilling (NEEM) ice core. Climate of the Past, 2013, 9, 2713-2730.	1.3	133
13	Gas transport in firn: multiple-tracer characterisation and model intercomparison for NEEM, Northern Greenland. Atmospheric Chemistry and Physics, 2012, 12, 4259-4277.	1.9	130
14	Where to find 1.5 million yr old ice for the IPICS "Oldest-Ice" ice core. Climate of the Past, 2013, 9, 2489-2505.	1.3	123
15	Thermal fractionation of air in polar firn by seasonal temperature gradients. Geochemistry, Geophysics, Geosystems, 2001, 2, n/a-n/a.	1.0	119
16	A method for precise measurement of argon 40/36 and krypton/argon ratios in trapped air in polar ice with applications to past firn thickness and abrupt climate change in Greenland and at Siple Dome, Antarctica. Geochimica Et Cosmochimica Acta, 2003, 67, 325-343.	1.6	119
17	Timing and structure of the Younger Dryas event and its underlying climate dynamics. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 23408-23417.	3.3	119
18	Enhanced tropical methane production in response to iceberg discharge in the North Atlantic. Science, 2015, 348, 1016-1019.	6.0	118

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19	High variability of Greenland surface temperature over the past 4000 years estimated from trapped air in an ice core. Geophysical Research Letters, 2011, 38, n/a-n/a.	1.5	114
20	Fractionation of gases in polar ice during bubble close-off: New constraints from firn air Ne, Kr and Xe observations. Earth and Planetary Science Letters, 2006, 244, 474-500.	1.8	113
21	Carbon isotopes characterize rapid changes in atmospheric carbon dioxide during the last deglaciation. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 3465-3470.	3.3	109
22	Deglacial temperature history of West Antarctica. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 14249-14254.	3.3	105
23	¹⁴ CH ₄ Measurements in Greenland Ice: Investigating Last Glacial Termination CH ₄ Sources. Science, 2009, 324, 506-508.	6.0	88
24	Two-million-year-old snapshots of atmospheric gases from Antarctic ice. Nature, 2019, 574, 663-666.	13.7	88
25	Minimal geological methane emissions during the Younger Dryasâ€“Preboreal abrupt warming event. Nature, 2017, 548, 443-446.	13.7	86
26	Deep air convection in the firn at a zero-accumulation site, central Antarctica. Earth and Planetary Science Letters, 2010, 293, 359-367.	1.8	82
27	Ice Record of Â13C for Atmospheric CH4 Across the Younger Dryas-Preboreal Transition. Science, 2006, 313, 1109-1112.	6.0	80
28	Fractionation of soil gases by diffusion of water vapor, gravitational settling, and thermal diffusion. Geochimica Et Cosmochimica Acta, 1996, 60, 1005-1018.	1.6	78
29	Little Ice Age cold interval in West Antarctica: Evidence from borehole temperature at the West Antarctic Ice Sheet (WAIS) Divide. Geophysical Research Letters, 2012, 39, .	1.5	75
30	A revised +10Â±4Â°C magnitude of the abrupt change in Greenland temperature at the Younger Dryas termination using published GISP2 gas isotope data and air thermal diffusion constants. Quaternary Science Reviews, 2005, 24, 513-519.	1.4	65
31	Widespread six degrees Celsius cooling on land during the Last Glacial Maximum. Nature, 2021, 593, 228-232.	13.7	65
32	Trace gas disequilibria during deep-water formation. Deep-Sea Research Part I: Oceanographic Research Papers, 2007, 54, 939-950.	0.6	64
33	Laboratory determination of thermal diffusion constants for 29N2/28N2 in air at temperatures from â^'60 to 0Â°C for reconstruction of magnitudes of abrupt climate changes using the ice core fossilâ€“air paleothermometer. Geochimica Et Cosmochimica Acta, 2003, 67, 345-360.	1.6	63
34	Convective mixing of air in firn at four polar sites. Earth and Planetary Science Letters, 2006, 244, 672-682.	1.8	61
35	Antarctic surface temperature and elevation during the Last Glacial Maximum. Science, 2021, 372, 1097-1101.	6.0	61
36	Gas records from the West Greenland ice margin covering the Last Glacial Termination: a horizontal ice core. Quaternary Science Reviews, 2006, 25, 865-875.	1.4	60

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37	4Â±1.5ÂÂ°C abrupt warming 11,270Âyr ago identified from trapped air in Greenland ice. Earth and Planetary Science Letters, 2008, 268, 397-407.	1.8	59
38	Synchronous volcanic eruptions and abrupt climate change â¼17.7 ka plausibly linked by stratospheric ozone depletion. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 10035-10040.	3.3	58
39	Radiometric ⁸¹ Kr dating identifies 120,000-year-old ice at Taylor Glacier, Antarctica. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 6876-6881.	3.3	57
40	Persistent multi-decadal Greenland temperature fluctuation through the last millennium. Climatic Change, 2010, 100, 733-756.	1.7	56
41	Old carbon reservoirs were not important in the deglacial methane budget. Science, 2020, 367, 907-910.	6.0	50
42	Determining the Thermal Diffusion Factor for 40Ar/36Ar in Air To Aid Paleoreconstruction of Abrupt Climate Change. Journal of Physical Chemistry A, 2003, 107, 4636-4642.	1.1	49
43	A method to measure Kr/N₂ ratios in air bubbles trapped in ice cores and its application in reconstructing past mean ocean temperature. Journal of Geophysical Research, 2007, 112, .	3.3	49
44	An ice core record of near-synchronous global climate changes at the BÃ¸lling transition. Nature Geoscience, 2014, 7, 459-463.	5.4	48
45	Argon and nitrogen isotopes of trapped air in the GISP2 ice core during the Holocene epoch (0â€“11,500) Tj ETQq1 1 0.784314 rgBT O 72, 4675-4686.	1.6	45
46	The Ross Sea Dipole â€“ temperature, snow accumulation and sea ice variability in the Ross Sea region, Antarctica, over the past 2700Âyears. Climate of the Past, 2018, 14, 193-214.	1.3	44
47	Observations of O2:CO2exchange ratios during ecosystem gas exchange. Global Biogeochemical Cycles, 2004, 18, n/a-n/a.	1.9	42
48	The recent warming trend in North Greenland. Geophysical Research Letters, 2017, 44, 6235-6243.	1.5	40
49	Earthâ€™s radiative imbalance from the Last Glacial Maximum to the present. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 14881-14886.	3.3	40
50	Noble gases as proxies of mean ocean temperature: sensitivity studies using a climate model of reduced complexity. Quaternary Science Reviews, 2011, 30, 3728-3741.	1.4	39
51	Observing and modeling the influence of layering on bubble trapping in polar firn. Journal of Geophysical Research D: Atmospheres, 2015, 120, 2558-2574.	1.2	39
52	Isotopic constraints on marine and terrestrial N2O emissions during the last deglaciation. Nature, 2014, 516, 234-237.	13.7	38
53	The SP19 chronology for the South Pole Ice Core â€“ Part 1: volcanic matching and annual layer counting. Climate of the Past, 2019, 15, 1793-1808.	1.3	38
54	Controls on the movement and composition of firn air at the West Antarctic Ice Sheet Divide. Atmospheric Chemistry and Physics, 2011, 11, 11007-11021.	1.9	37

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55	A 60 yr record of atmospheric carbon monoxide reconstructed from Greenland firn air. Atmospheric Chemistry and Physics, 2013, 13, 7567-7585.	1.9	37
56	A novel method to study the phase relationship between Antarctic and Greenland climate. Geophysical Research Letters, 2003, 30, n/a-n/a.	1.5	36
57	Global ocean heat content in the Last Interglacial. Nature Geoscience, 2020, 13, 77-81.	5.4	31
58	Abrupt changes in atmospheric methane at the MIS 5bâ€“5a transition. Geophysical Research Letters, 2007, 34, .	1.5	30
59	Controls on Millennialâ€Scale Atmospheric CO₂ Variability During the Last Glacial Period. Geophysical Research Letters, 2018, 45, 7731-7740.	1.5	29
60	Does Î´¹⁸O of O₂ record meridional shifts in tropical rainfall?. Climate of the Past, 2017, 13, 1323-1338.	1.3	26
61	Abrupt Heinrich Stadial 1 cooling missing in Greenland oxygen isotopes. Science Advances, 2021, 7, .	4.7	24
62	Kinetic fractionation of gases by deep air convection in polar firn. Atmospheric Chemistry and Physics, 2013, 13, 11141-11155.	1.9	23
63	Rapid Access Ice Drill: a new tool for exploration of the deep Antarctic ice sheets and subglacial geology. Journal of Glaciology, 2016, 62, 1049-1064.	1.1	22
64	Perfluorocyclobutane (PFC-318,) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 387 Td (<i>c</i>-C₄F₈) in the global atmosphere. Atmospheric Chemistry and Physics, 2019, 19, 10335-10359.	1.9	22
65	New methods for measuring atmospheric heavy noble gas isotope and elemental ratios in ice core samples. Rapid Communications in Mass Spectrometry, 2018, 32, 801-814.	0.7	21
66	Dispersion in deep polar firn driven by synoptic-scale surface pressure variability. Cryosphere, 2016, 10, 2099-2111.	1.5	20
67	A Horizontal Ice Core From Taylor Glacier, Its Implications for Antarctic Climate History, and an Improved Taylor Dome Ice Core Time Scale. Paleoceanography and Paleoclimatology, 2018, 33, 778-794.	1.3	20
68	Relative timing and variability of atmospheric methane and GISP2 oxygen isotopes between 68 and 86 ka. Global Biogeochemical Cycles, 2009, 23, .	1.9	19
69	A New Method for Analyzing ¹⁴C of Methane in Ancient Air Extracted from Glacial Ice. Radiocarbon, 2008, 50, 53-73.	0.8	18
70	Measurements of 14C in ancient ice from Taylor Glacier, Antarctica constrain in situ cosmogenic 14CH4 and 14CO production rates. Geochimica Et Cosmochimica Acta, 2016, 177, 62-77.	1.6	18
71	Magnitude and temporal evolution of Dansgaardâ€“Oeschger event 8 abrupt temperature change inferred from nitrogen and argon isotopes in GISP2 ice using a new least-squares inversion. Earth and Planetary Science Letters, 2014, 395, 81-90.	1.8	17
72	Using Noble Gas Measurements to Derive Airâ€Sea Process Information and Predict Physical Gas Saturations. Geophysical Research Letters, 2017, 44, 9901-9909.	1.5	17

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73	A novel method for obtaining very large ancient air samples from ablating glacial ice for analyses of methane radiocarbon. Journal of Glaciology, 2008, 54, 233-244.	1.1	16
74	Is the Noble Gasâ€Based Rate of Ocean Warming During the Younger Dryas Overestimated?. Geophysical Research Letters, 2019, 46, 5928-5936.	1.5	16
75	Deglacial water-table decline in Southern California recorded by noble gas isotopes. Nature Communications, 2019, 10, 5739.	5.8	16
76	The SP19 chronology for the South Pole Ice Core â€“ Part 2: gas chronology, Î”age, and smoothing of atmospheric records. Climate of the Past, 2020, 16, 2431-2444.	1.3	16
77	Differentiating bubble-free layers from melt layers in ice cores using noble gases. Journal of Glaciology, 2015, 61, 585-594.	1.1	15
78	Atmospheric gas records from Taylor Glacier, Antarctica, reveal ancient ice with ages spanning the entire last glacial cycle. Climate of the Past, 2017, 13, 943-958.	1.3	15
79	Atmospheric History of H₂ Over the Past Century Reconstructed From South Pole Firn Air. Geophysical Research Letters, 2020, 47, e2020GL087787.	1.5	15
80	Spatial pattern of accumulation at Taylor Dome during Marine Isotope Stage 4: stratigraphic constraints from Taylor Glacier. Climate of the Past, 2019, 15, 1537-1556.	1.3	14
81	Precise determination of Ar, Kr and Xe isotopic fractionation due to diffusion and dissolution in fresh water. Earth and Planetary Science Letters, 2019, 514, 156-165.	1.8	14
82	An 83â€‰000-year-old ice core from Roosevelt Island, Ross Sea, Antarctica. Climate of the Past, 2020, 16, 1691-1713.	1.3	14
83	Steady state fractionation of heavy noble gas isotopes in a deep unsaturated zone. Water Resources Research, 2017, 53, 2716-2732.	1.7	13
84	Ice stratigraphy at the PÃ¢kitsoq ice margin, West Greenland, derived from gas records. Journal of Glaciology, 2009, 55, 411-421.	1.1	12
85	High-precision 14C measurements demonstrate production of in situ cosmogenic 14CH4 and rapid loss of in situ cosmogenic 14CO in shallow Greenland firn. Earth and Planetary Science Letters, 2013, 365, 190-197.	1.8	12
86	New technique for high-precision, simultaneous measurements of CH₄, N₂O and CO₂ concentrations; isotopic and elemental ratios of N₂, O₂ and Ar; and total air content in ice cores by wet extraction. Atmospheric Measurement Techniques, 2020, 13, 6703-6731.	1.2	12
87	Deep ice drilling, bedrock coring and dust logging with the Rapid Access Ice Drill (RAID) at Minna Bluff, Antarctica. Annals of Glaciology, 2021, 62, 324-339.	2.8	11
88	Evolution of mean ocean temperature in Marine Isotope Stage 4. Climate of the Past, 2021, 17, 2273-2289.	1.3	10
89	H ₂ in Antarctic firn air: Atmospheric reconstructions and implications for anthropogenic emissions. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	9
90	Gravitational separation of Arâ€•N₂ and age of air in the lowermost stratosphere in airborne observations and a chemical transport model. Atmospheric Chemistry and Physics, 2020, 20, 12391-12408.	1.9	9

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91	Fractionation of O₂â^•N₂ and Arâ^•N₂ in the Antarctic ice sheet during bubble formation and bubbleâ€“clathrate hydrate transition from precise gas measurements of the Dome Fuji ice core. Cryosphere, 2021, 15, 5529-5555.	1.5	9
92	Increasing atmospheric helium due to fossil fuel exploitation. Nature Geoscience, 2022, 15, 346-348.	5.4	9
93	The triple argon isotope composition of groundwater on ten-thousand-year timescales. Chemical Geology, 2021, 583, 120458.	1.4	8
94	Monsoons and Meltdowns. Science, 2009, 326, 240-241.	6.0	7
95	Methane and megafauna. Nature Geoscience, 2011, 4, 271-272.	5.4	7
96	Heavy Noble Gas Isotopes as New Constraints on the Ventilation of the Deep Ocean. Geophysical Research Letters, 2019, 46, 8926-8932.	1.5	7
97	In situ cosmogenic radiocarbon production and 2â€Ð ice flow line modeling for an Antarctic blue ice area. Journal of Geophysical Research, 2012, 117, .	3.3	6
98	The influence of layering and barometric pumping on firn air transport in a 2-D model. Cryosphere, 2018, 12, 2021-2037.	1.5	6
99	Ice core evidence for atmospheric oxygen decline since the Mid-Pleistocene transition. Science Advances, 2021, 7, eabj9341.	4.7	6
100	Facility for testing ice drills. Scientific Drilling, 0, 22, 29-33.	1.0	3
101	Corrigendum to ``Gas transport in firn: multiple-tracer characterisation and model intercomparison for NEEM, Northern Greenland'' published in Atmos. Chem. Phys., 12, 4259â€“4277, 2012. Atmospheric Chemistry and Physics, 2014, 14, 3571-3572.	1.9	2
102	A method for resolving changes in atmospheric Heâ€‰â^•â€‰N₂ as an indicator of fossil fuel extraction and stratospheric circulation. Atmospheric Measurement Techniques, 2021, 14, 2515-2527.	1.2	2
103	Deglacial decoupling. Nature Geoscience, 2013, 6, 994-995.	5.4	1
104	Improved helium exchange gas cryostat and sample tube designs for automated gas sampling and cryopumping. Geochemistry, Geophysics, Geosystems, 2006, 7, n/a-n/a.	1.0	0
105	Millennialâ€Scale Changes in Terrestrial and Marine Nitrous Oxide Emissions at the Onset and Termination of Marine Isotope Stage 4. Geophysical Research Letters, 2020, 47, e2020GL089110.	1.5	0
106	Chlorine and Seawater. Inference, 2020, 5, .	0.0	0