

Douglas Reed MacAyeal
Department of the Geophysical Sciences
The University of Chicago

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Education

1983	Ph.D. Geophysical Fluid Dynamics	Princeton University, Princeton, NJ advisor: Kirk Bryan
1979	M.S. Physics/Glaciology	University of Maine, Orono, ME advisor: Robert Thomas
1976	Sc.B. Physics	Brown University, Providence, RI <i>Magna cum laude</i> , honors in physics

Personal

Birth Date: 8 December, 1954; Age: 66

Birth Place: Boston, MA, USA

Marital Status: Married, Linda A. MacAyeal (Sparks)

Children: Leigh C. (MacAyeal) Kasten (Brown U., Sc.B.; Cornell U., DVM), Hannah R. MacAyeal (U. Penn, B.S., U. Penn Veterinary Medicine, DVM), Evan C. MacAyeal (Carleton College, B.A., Columbia University, Financial Engineering, M.S.)

Research Interests

Glaciology: The physical processes that determine the evolution of ice and climate on Earth over the past, present and future. Oceanography: ice/ocean interaction.

Employment

Department of the Geophysical Sciences, University of Chicago 1983-Present
Professor (Asst. until 1987, Assoc. until 1992 and Full until present)

Prior to 1983: I was a graduate student/research assistant at Princeton University and University of Maine.

Awards and Honors

- 2019 Seligman Crystal, International Glaciological Society (IGS)
- 2013 Nye Lecture, American Geophysical Union (AGU), Fall Meeting
- 2010 Goldthwait Award (Polar Medal) of the Byrd Polar Research Center, Ohio State University
- 2005 Provost's Teaching Award of the University of Chicago
- 2002 Quantrell Teaching Award of the University of Chicago
- 1997 Richardson Medal of the IGS
- 1988 James Macelwane Medal of the AGU
- 1988 Fellow of the AGU
- Antarctic geographic names: MacAyeal Ice Stream, MacAyeal Peak

Teaching Experience

- GeoSci 242: Geophysical Fluid Dynamics, I. - Foundations
- GeoSci 353: Oceanic and Atmospheric Waves
- Granular Fluid Mechanics
- Glacial Isostasy
- Physical Science 108: The Earth
- Physical Science 109: Ice Age Earth
- Physical Science 132: Dynamic Environment and Emergence of Humankind
- Physical Science 133: Dynamic Environment and Settlement Systems
- Physical science 134: Global Warming: Understanding the Forecast
- GeoSci 235: Introduction to Inverse Methods in Geophysical Sciences
- GeoSci 233: Physical Oceanography
- GeoSci 212: Introduction to Seismology
- GeoSci 232: Introduction to Glaciology

PhD advisor for:

- Grant Macdonald, PhD December 2019 (Thesis title: Supraglacial Lakes on McMurdo Ice Shelf, Antarctica)
- Andrew Malone, PhD May 2016 (Thesis title: Glaciers and Climate in the High Andes)
- L. Mac Cathles, PhD 2011 (Thesis topic: radiation/surface roughness feedbacks)
- K. M. Brunt, PhD 2008 (Thesis topic: Tidal influences on Ross Ice Shelf flow.)
- I. D. Turnbull, PhD 2008 (Thesis topic: Inverse barometer effect and icebergs.)
- Olga V. Sergienko, PhD 2005 (Thesis topic: Surface melting of ice shelves and icebergs.)
- Christina L. Hulbe, PhD 1998 (Thesis topic: West Antarctic ice-sheet modeling.)
- Charles S. Jackson, PhD 1998 (Thesis topic: Ice-sheet topography effects on atmospheric circulation.)

- Dean Lindstrom, PhD 1990 (Thesis topic: Model of the Eurasian Ice Sheet at the Last Glacial Maximum)
- Robert W. Grumbine, PhD 1989 (Thesis title: Effect of coastal polynyas on the thermohaline circulation of the Antarctic continental shelves.)

MS advisor for:

- Jieyan Yang 2018 (Thesis topic: Automatic Weather Station data, McMurdo Ice Shelf)
- Jinqiao Lin 2017 (Thesis topic: Ice shelf seismicity, wet vs. dry signals)
- Honyu Xiao 2016 (Thesis topic: Neural network earthquake warning systems)
- Marie Bergelin 2016 (Thesis topic: Landsat detection of snow facies in Greenland)
- Christopher Oster 2015 (Thesis topic: Glacial Lake Outburst Floods of Nepal)
- Yitan Wang, MS 2014 (Thesis topic: Ambient noise correlation analysis on an iceberg)
- Kristopher Darnell, MS 2011 (Thesis topic: supraglacial lake ogives)
- Marianne H. Okal, MS 2005 (Thesis topic: Characteristics of Iceberg Collisions.)
- Young-Jin Kim, MS 2004 (Thesis topic: Tidal motions of icebergs.)
- Leila Zajac, MS 2002 (Thesis topic: North American biomes.)
- Theodore L. Gotis, MS 1999 (Thesis topic: Normal modes of the Great Lakes and World Ocean.)
- Katsumi Matsumoto, MS 1996 (Thesis topic: Ice-rafted debris in the North Atlantic.)
- Hailing Wang, MS 1993 (Thesis topic: Ice-sheet thermodynamics.)
- Shinya Kakuta, MS 1992 (Thesis topic: Surface temperature history of Prudhoe Bay derived from borehole temperature profiles using control methods.)
- Cynthia J. Engberts, MS 1991 (Thesis title: Evaluation of the precipitation patterns over Antarctica.)

Students at Other Universities Advised

- John W. Jenson, PhD Oregon State University, 1993 (Thesis topic: Subglacial till deformation and Lake Michigan ice-lobe modeling.)
- John Firestone, PhD University of Washington, 1992 (Thesis topic: Borehole paleothermometry inverse methods.)

Postdoctoral Scholars Mentored

- Alison Banwell, 2012 – 2013 (now a Fellow at Scott Polar Research Institute, Cambridge, UK)
- Justin Burton 2010 – 2013 (now a professor at Emory University, shared mentoring with Prof. Sidney Nagel, Physics Department)
- Mac Cathles, 2012 – 2013 (now a Miller Fellow at U. Michigan)

- Jason Amundson, 2010-2011 (now on faculty of U. Alaska SE)
- Jeremy Bassis, 2006-2009 (now on faculty of U. Michigan)

Field Experience

- 13 field seasons in Antarctica (Ross Ice Shelf, Ross Sea, Siple Coast Ice Streams, Icebergs of the Ross Sea, Meltponds of the McMurdo Ice Shelf)

Editorships

- Associate Scientific Editor, *Annals of Glaciology*, No. 79, Progress in Cryoseismology (to be complete in 2019)
- Co-Chief Scientific Editor, *Annals of Glaciology*, No. 66, Themes on Glaciers in a Warming Climate, Beijing, China, 2013.
- Associate Scientific Editor, *Annals of Glaciology*, No. 60, Themes on Ice/Ocean Interaction, La Jolla, California, USA, 2011.
- Co-Chief Scientific Editor, *Annals of Glaciology*, No. 58, Themes on Snow, Ice and Humanity in a Changing Climate, Sapporo, Japan, 2010.
- Associate Scientific Editor, *Annals of Glaciology*, No. 53, IGS symposium on Snow and Avalanches, Manali, India, 2009.
- Chief Editor, *Annals of Glaciology*, Vol. 40, IGS symposium on Ice and Water Interactions, 2004.
- Chief Editor, *Journal of Glaciology*, Vols. 37 – 43, 1991 – 1998.
- Associate Scientific Editor, *Journal of Glaciology*, Vol. 36, 1990.
- Chief Editor, *Annals of Glaciology*, Vol. 14, IGS symposium on Ice and Climate, 1990.

Scientific Community Activities

- Council member, International Glaciological Society (IGS), 2017-2020
- President, International Glaciological Society (IGS), 2011-2017.
- Committee of Visitors, Office of Polar Programs (Arctic Program), National Science Foundation, 2013.
- GLISN (Greenland Ice Sheet Seismic Network) board of advisors, 2010-2012.
- IRIS/PASSCAL (Program for Array Seismic Studies of Continental Lithosphere) Instrument Center Standing Committee, 2009-2012.
- Polar Icebreakers in a Changing World: an Assessment of U.S. Needs, National Research Council, 2005-2006.
- Committee of Advisors, Office of Polar Programs, National Science Foundation, 1999-2002.

Most Recent Research Grants

- co-PI: NSF 1841467 “NSFGEO-NERC: Ice-shelf instability caused by active surface meltwater production, movement, ponding and hydrofracture”, 2019-2022.
- PI: NSF 1443126 “Impact of Supraglacial Lakes on Ice-Shelf Stability”, 2015-2017.

Publications

(130 peer reviewed)

Google Scholar: h-index 52, 8806 citations.

1. **MacAyeal, D. R.**, (2021). Chapter 9, Least squares data inversion in glaciology. *in*, *Glaciers and Ice Sheets in the Climate System*, The Karthaus Summer School Lecture Notes. Fowler, A.C. and F. S. L. Ng, *ed.*, Springer Nature Switzerland, AG. doi: 10.1007/978-3-030-42584-5
2. **MacAyeal, D. R.**, O. V. Sergienko, A. F. Banwell, G. J. Macdonald, I. C. Willis and L. A. Stevens, (2020) Treatment of ice-shelf evolution combining flow and flexure. *J. Glaciol.*, *in press*.
3. **MacAyeal, D. R.**, I. C. Willis, A. F. Banwell, G. J. Macdonald and B. Goodsell, (2019). Diurnal lake-level cycles on ice shelves driven by meltwater input and ocean tidal tilt. *J. Glaciol.*, 66(256), 231-247. doi: 10.1017/jog.2019.98.
4. **MacAyeal, D. R.** (2019) Revisiting Weertman's Tombstone Bed, *Ann. Glaciol.*, 60(80), 21-29. doi:10.1017/aog.2019.31
5. Malone, A. G. O., A. M Doughty and D. R., **MacAyeal**, (2019). Interannual climate variability helps define the means state of glaciers. *J. Glaciol.*, 65(251), 508-517 (doi: [10.1017/jog.2019.28](https://doi.org/10.1017/jog.2019.28))
6. Macdonald, G.J., A. F. Banwell, I. C. Willis, D. P. Mayer, B. Goodsell and D. R. **MacAyeal**, (2019). Formation of pedestaled, relict lakes on McMurdo Ice Shelf, Antarctica. *J. Glaciol.*, 65(250), 337-343, doi: 10.1017/jog.2019.17
7. Banwell, A. F., I. C. Willis, G. J. Macdonald, B. Goodsell and D. R. **MacAyeal** (2019) Direct measurements of ice-shelf flexure caused by surface meltwater ponding and drainage, *Nature Com.*, 10(1), 730, doi: 10.1038/s41467-019-09522-1
8. **MacAyeal, D. R.**, J. Lin, A. F. Banwell, E. A. Okal, I. C. Willis, B. Goodsell and G. J. Macdonald, (2019). Diurnal seismicity cycle linked to sub-surface melting on an ice shelf, *Annals of Glaciology*, 60(79), 137-157 (doi: 10.1017/aog.2018.29)
9. Macdonald, G. J., A.F. Banwell. and D. R. **MacAyeal**, (2018). Seasonal evolution of supraglacial lakes on a floating ice tongue, Petermann Glacier, Greenland, *Annals of Glaciology*, 59(76 Pt. 1), 56-65, doi:10.1017/aog.2018.9.
10. **MacAyeal, D. R.**, (2018). Seismology gets under the skin of the Antarctic Ice Sheet. *Geophysical Research letters*, 45(20), 11,173-11,176 (doi: 10.1029/2018GL080366)

11. Banwell, A. F., I. C. Willis, R. Goodsell, G. J. Macdonald, D. Mayer, A. Powell and D. R. **MacAyeal**, 2017. Calving and Rifting on McM Ice Shelf, Antarctica. *Annals of Glaciology*, 58(74), 78-87, doi: 10.1017/aog.2017.12.
12. Banwell, A. F., and D. R. **MacAyeal**, 2015. Ice-shelf fracture due to viscoelastic flexure stress induced by fill/drain cycles of supraglacial lakes, *Antarctic Science*, doi:10.1017/S0954102015000292.
13. **MacAyeal**, D. R., O. V. Sergienko and A. F. Banwell, 2015. A model of viscoelastic ice-shelf flexure, *Journal of Glaciology*, 61(228), 635 - 645, doi: 10.3189/2015JoG14J169.
14. **MacAyeal**, D. R., Y. Wang and E. A. Okal, 2015. Ambient seismic, hydroacoustic and flexural-gravity wave noise on a tabular iceberg, *Journal of Geophysical Research Earth Surf.*, 120, 200–211, doi: 10.1002/2014JF003250.
15. Brunt, K. M. and D. R. **MacAyeal**, 2014. Tidal modulation of ice-shelf flow: a viscous model of the Ross Ice Shelf, *Journal of Glaciology*, 60(221), 500-508.
16. Cathles, L. M., D. S. Abbot and D. R. **MacAyeal**, 2014. Intra-surface radiative transfer limits the geographic extent of snow penitents on horizontal snow fields, *Journal of Glaciology*, 60(219), 147-154.
17. Banwell, A. F., M. Cabellero, N. S. Arnold, N. F. Glasser, M. L. Cathles and D. R. **MacAyeal**, 2014. Supraglacial lakes on the Larsen B ice shelf, Antarctica, and at Paakitsoq, Greenland: a comparative study, *Annals of Glaciology*, 55(66), doi: 10.3189/2014AoG66A049
18. Banwell, A. F., D. R. **MacAyeal**, and O. V. Sergienko, 2013. Break-up of the Larsen B Ice Shelf triggered by chain-reaction drainage of supraglacial lakes, *Geophysical Research Letters*, 40, doi:10.1002/2013GL057694. See also Research Highlight in *Nature*: <http://www.nature.com/nature/journal/v503/n7477/full/503441d.html>
19. Darnell, K., L. M. Cathles, J. M. Amundson, D. S. Abbot, and D. R. **MacAyeal**, 2013. The morphology of supraglacial lake ogives, *Journal of Glaciology*, 59(215), 533-544.
20. Scambos, T. A., R. Ross, T. Haran, R. Bauer, D. G. Ainley, K.-W. Seo, M. de Keyser, A. Behar and D. R. **MacAyeal**, 2013. A camera and multi-sensor automated station design for polar physical and biological systems monitoring: AMIGOS, *Journal of Glaciology*, 59 (214), 303-314.
21. **MacAyeal, D. R.**, and O. V. Sergienko, 2012. The flexural dynamics of melting ice shelves, *Ann. Glaciol.*, 54(63), 1-10.
22. LaBarbera, C. H., and D. R. **MacAyeal**, 2011. Traveling supraglacial lakes on George VI Ice Shelf, Antarctica, *Geophys. Res. Lett.*, 38, L24501, doi:10.1029/2011GL049970.
23. Freed-Brown, J., W. W. Zhang, J. M. Amundson and D. R. **MacAyeal**, 2012. Blocking a wave: frequency band gaps in ice shelves with periodic crevasses, *Ann. Glaciol.*, 54(60), 85-89.
24. **MacAyeal, D. R.**, J. Freed-Brown, W. W. Zhang and J. M. Amundson, 2012. The influence of ice mélange on fjord seiches, *Ann. Glaciol.*, 54(60), 45-49.

25. Burton, J. C., J. M. Amundson, D. S. Abbot, A. Boghosian, L. M. Cathles, S. Correa-Legisos, K. N. Darnell, N. Guttenberg, D. M. Holland, and **D. R. MacAyeal**, 2012. Laboratory investigations of iceberg-capsize dynamics, energy dissipation and tsunamigenesis. *J. Geophys. Res.*, F01007, doi:10.1029/2011JF002055.
26. Leonard, K. C., L.-B. Tremblay, J. E. Thom and **D. R. MacAyeal**, 2012. Drifting snow threshold measurements near McMurdo Station, Antarctica: a sensor comparison study, *Cold Regions Science and Technology*, 70, 71-80.
27. Brunt, K. M., E. A. Okal and **D. R. MacAyeal**. 2011. Ice-shelf calving triggered by the Honshu earthquake and tsunami, March 2011, *J. Glaciol.*, 57(205), 785-788.
28. Guttenberg, N., D. S. Abbot, J. M Amundson, J. C. Burton, L. M. Cathles, **D. R. MacAyeal** and W. W. Zhang. 2011. A computational investigation of iceberg capsize as a driver of explosive ice-shelf disintegration. *Ann. Glaciol.*, 52(59), 51-59.
29. Cathles, L. M., D. S. Abbot, J. N. Bassis and **D. R. MacAyeal**, 2011. Modeling the evolution of surface ablation features. *Ann. of Glaciol.*, 52(59), 96-108.
30. **MacAyeal, D. R.**, D. S. Abbot and O. V. Sergienko. 2011. Iceberg capsize tsunamigenesis. *Ann. Glaciol.*, 52(58), 51-56. See News and Views in 6 April, 2011, issue of *Nature*.
31. Bromirski, P. D., O. V. Sergienko and **D. R. MacAyeal**, 2010. Transoceanic Infragravity Waves Impacting Antarctic Ice-Shelves. *Geophysical Research Letters*, 37, L02502, doi: 10.129/2009/GL041488.
32. Martin, S., R. Drucker, R. C. Aster, F. J. Davey, E. A. Okal, T. Scambos and **D. R. MacAyeal**, 2010. Kinematic and seismic analysis of giant tabular iceberg breakup. *Journal of Geophysical Research*, 115, doi:10.1029/2009JB006700, in press.
33. Brunt, K. M., M. A. King, H. A. Fricker and **D. R. MacAyeal**, 2010. Flow of the Ross Ice Shelf, Antarctica, is modulated by ocean tide. *Journal of Glaciology*, 56 (195), 157-161.
34. Sergienko, O. V., R. A. Bindschadler and **D. R. MacAyeal**, 2009. Stick/Slip behavior of ice streams: Modeling investigations. *Annals of Glaciology*, 50(52), 87-94.
35. Cathles, L. M., E. A. Okal and **D. R. MacAyeal**, 2009. Sea-swell arrival at the front of the Ross Ice Shelf, Antarctica, observed in a 2-year seismometer record. *Journal of Geophysical Research*, 114, F02015, doi:10.1029/2007JF000934.
36. **MacAyeal, D. R.**, E. A. Okal, R. C. Aster and J. N. Bassis, 2009. Seismic Observations of Glaciogenic Ocean Waves (Micro-Tsunamis) on Icebergs and Ice Shelves. *Journal of Glaciology*, 55(190), 193-206.
37. Sergienko, O. V., R. A. Bindschadler, P. L. Vornberger and **D. R. MacAyeal**, 2008. Ice stream basal conditions from block-wise surface data inversion and simple regression models of ice stream flow: Application for Bindschadler Ice Stream. *Journal of Geophysical Research*, 113, F04010, doi:10.1029/2008JF001004.
38. **MacAyeal, D. R.**, E. A. Okal, R. C. Aster and J. N. Bassis, 2008. Seismic and hydroacoustic tremor generated by colliding icebergs. *Journal of Geophysical Research*, 113, F03011, doi: 10.1029/2008JF001005.

39. Arbic, B. K., J. X. Mitrovica, **D. R. MacAyeal** and G. A. Milne, 2008. On the factors behind large Labrador Sea tidal elevations during the last glacial cycle, and the potential implications for Heinrich events. *Paleoceanography*, 23, PA3211, doi: 10.1029/2007PA001573.
40. Sergienko, O. V., **D. R. MacAyeal** and J. E. Thom, 2007. Reconstruction of snow/ice thermal properties from observed temperature variation: Application to iceberg C16 (Ross Sea, Antarctica), 2004-2007. *Annals of Glaciology*, 49, 91-95.
41. Leonard, K. C., L.-Bruno Tremblay, **D. R. MacAyeal**, and S. S. Jacobs, 2008. Interactions of wind-transported snow with a rift in the Ross Ice Shelf, Antarctica, *Geophys. Res. Lett.*, 35, L05501, doi:10.1029/2007GL033005.
42. **MacAyeal, D. R.**, M. H. Okal, J. E. Thom, K. M. Brunt, Y.-J. Kim and A. K. Bliss, 2008. Tabular iceberg collisions within the coastal regime. *Journal of Glaciology*, 54(118), 371-386.
43. Sergienko, O. V., **D. R. MacAyeal** and R. A. Bindenschadler, 2007. Causes of sudden, short term changes in ice-stream surface elevation. *Geophysical Research Letters*, 34, L22503, doi:10.1029/2006GL027235.
44. Okal, E. A. and **D. R. MacAyeal**, 2006. Seismic recording on drifting icebergs: Catching seismic waves, tsunamis and storms from Sumatra and elsewhere. *Seismological Research Letters*. 77(6): 659-671.
45. **MacAyeal, D. R.**, E. A. Okal, R. C. Aster, *et al.*, 2006. Transoceanic wave propagation links iceberg calving margins of Antarctica with storms in tropics and Northern Hemisphere. *Geophysical Research Letters*, 33(17): L17502
46. Joughin, I., J. L. Bamber, T. Scambos, S. Tulaczyk, M. Fahnestock and **D. R. MacAyeal**, 2006. Integrating satellite observations with modeling: Basal shear stress of the Filchner-Ronne ice streams, Antarctica. *Philosophical Transactions of the Royal Society, A. – Mathematical and Physical and Engineering Sciences*, 364(1844): 1795-1814.
47. Brunt K.M., O. Sergienko and **D. R. MacAyeal**, 2006. Observations of unusual fast-ice conditions in the southwest Ross Sea, Antarctica: Preliminary analysis of iceberg and storminess effects. *Annals of Glaciology*, 44, 183-18.
48. Committee on the Assessment of U. S. Coast Guard Polar Icebreaker Roles and Future Needs, National Research Council (including **D. R. MacAyeal**), 2006. *Polar Icebreakers in a Changing World: An Assessment of U. S. Needs*. The National Academies Press.
49. Sergienko, O. V., and **D. R. MacAyeal**, 2005. Surface melting on Larsen Ice Shelf, Antarctica. *Annals of Glaciology*, 40: 215-218.
50. Fricker, H. A., J. N. Bassis, B. Minster and **D. R. MacAyeal**, 2005. ICESat's new perspective on ice shelf rifts: The vertical dimension. *Geophysical Research Letters*, 32(23), L23S08.
51. Parizek, B. R., R. B. Alley and **D. R. MacAyeal**, 2005. The PSU/UofC finite-element thermomechanical flowline model of ice-sheet evolution. *Cold Regions Science and Technology*, 42(2): 145-168.

52. Scambos, T., O. Sergienko, A. Sargent, **D. R. MacAyeal** and J. Fastook, 2005. ICESat profiles of tabular iceberg margins and iceberg breakup at low latitudes. *Geophysical Research Letters*, 32: L23S09.
53. Joughin, I., and **D. R. MacAyeal**, 2005. Calving of large tabular icebergs from ice shelf rift systems. *Geophysical Research Letters*, 32(2): L02501.
54. Joughin, I., S. Tulaczyk and **D. R. MacAyeal**, 2004. Melting and freezing beneath the Ross ice streams, Antarctica. *Journal of Glaciology*, 50(168):96-108.
55. Arbic, B. K., **D. R. MacAyeal**, J. X. Mitrovica, *et al.*, 2004. Paleoclimate – Ocean tides and Heinrich events. *Nature*, 432(7016), 460.
56. Joughin, I., **D. R. MacAyeal** and S. Tulaczyk, 2004. Basal shear stress of the Ross ice streams from control method inversions. *Journal of Geophysical Research-Solid Earth*, 109(B9): B09405.
57. **MacAyeal, D. R.**, T. A. Scambos, C. L. Hulbe, *et al.*, 2003. Catastrophic ice-shelf break-up by an ice-shelf-fragment-capsize mechanism. *Journal of Glaciology*, 49(164), 22-36.
58. Hulbe, C. L., **D. R. MacAyeal**, G. H. Denton, *et al.*, 2004. Catastrophic ice shelf breakup as the source of Heinrich event icebergs. *Paleoceanography*, 19(1): PA1004.
59. Schmeltz, M., E. Rignot, T. K. Dupont and **D. R. MacAyeal**, 2002. Sensitivity of Pine Island Glacier, West Antarctica, to changes in ice-shelf and basal conditions: a model study. *Journal of Glaciology*, 48(163): 552-558.
60. MacClune, K. L., A. G. Fountain, J. S. Kargel and **D. R. MacAyeal**, 2003. Glaciers of the McMurdo dry valleys: Terrestrial analog for Martian polar sublimation. *Journal of Geophysical Research-Planets*, 108(E4), 5031.
61. Cutler, P. I., D. M. Mickelson, P. M. Colgan, **D. R. MacAyeal** and B. R. Parizek, 2001. Influence of the Great Lakes on the dynamics of the Southern Laurentide ice sheet: Numerical experiments. *Geology*, 29(11): 1039-1042.
62. E. Rignot, D.G. Vaughan, M. Schmeltz, T.K. Dupont and **D.R. MacAyeal**, 2001. Acceleration of Pine Island and Thwaites Glaciers, West Antarctica. *Annals of Glaciology*, 34, 189-194.
63. Schmeltz, M., E. Rignot and **D. R. MacAyeal**, 2001. Ephemeral grounding as a signal of ice-shelf change. *Journal of Glaciology*, 47(156), 71-77.
64. Schmeltz, M., E. Rignot and **D.R. MacAyeal**, 2001. Tidal flexure along ice-sheets margins: Comparison of InSAR with an elastic plate model. *Annals of Glaciology*, 34, 202-208.
65. Joughin, I., M. Fahnestock, **D. R. MacAyeal**, J. L. Bamber and P. Gogineni, 2001. Observation and analysis of ice flow in the largest Greenland ice stream. *Journal of Geophysical Research*, 106(D24), 34021-342001.
66. Cutler, P. M., **D. R. MacAyeal**, D. M. Mickelson, *et al.*, 2000. A numerical investigation of ice-lobe-permafrost interaction around the southern Laurentide ice sheet. *Journal of Glaciology*, 46(153):311-325.

67. Rignot, E., L. Padman, **D. R. MacAyeal** and M. Schmeltz, 2000. Observation of ocean tides below the Filchner and Ronne Ice Shelves, Antarctica, using synthetic aperture radar interferometry: Comparison with tide model predictions. *Journal of Geophysical Research—Oceans*, 105(C8), 19615-19630.
68. Lazzara, M.A., K.C. Jezek, T.A. Scambos, **D.R. MacAyeal** and C.J. van der Veen, 1999. On the Calving of Icebergs from the Ross Ice Shelf. *Polar Geography*, 23(3), 201-212.
69. Hulbe, C. L. and **D. R. MacAyeal**, 1999. A new numerical model of coupled inland ice sheet, ice stream and ice shelf flow and its application to the West Antarctic Ice Sheet. *Journal of Geophysical Research*, 104 (B11), 349-366.
70. **MacAyeal, D. R.**, E. Rignot and C. L. Hulbe, 1998. Ice-shelf dynamics near the front of Filchner-Ronne Ice Shelf, Antarctica, revealed by SAR interferometry: model/interferogram comparison. *Journal of Glaciology*, 44, 419-428.
71. Rignot, E. and **D. R. MacAyeal**, 1998. Ice-shelf dynamics near the front of Filchner-Ronne Ice Shelf, Antarctica, revealed by SAR interferometry. *Journal of Glaciology*, 44, 405-418.
72. Hulbe, C. L., E. Rignot and **D. R. MacAyeal**, 1998. Comparison of ice-shelf creep flow simulations with ice-front motion of Filchner-Ronne Ice Shelf, Antarctica, detected by SAR interferometry. *Annals of Glaciology*, 27, 182-186.
73. Licciardi, J. M., P. U. Clark, J. W. Jenson and **D. R. MacAyeal**, 1998. Deglaciation of a soft-bedded Laurentide Ice Sheet. *Quaternary Science Reviews*, 17, 427-448.
74. Rommelaere, V. and **D. R. MacAyeal**, 1997. Large-scale rheology of the Ross Ice Shelf, Antarctica, computed by a control method. *Annals of Glaciology*, 24, 43-48.
75. Clark, P. U., J. M. Licciardi, **D. R. MacAyeal** and J. W. Jenson 1997. Numerical reconstruction of a soft-bedded Laurentide Ice Sheet during the last glacial maximum: Reply. *Geology*, 25, 380-381.
76. **MacAyeal, D. R.**, V. Rommelaere, P. Huybrechts, C. L. Hulbe, J. Determann, and C. Ritz, 1996. An Ice-Shelf Model Test Based on the Ross Ice Shelf. *Annals of Glaciology*, 23, 46-51.
77. Clark, P. U., J. M. Licciardi, **D. R. MacAyeal** and J. W. Jenson, 1996. Numerical reconstruction of a soft-bedded Laurentide Ice Sheet during the last glacial maximum. *Geology*, 23, 679-682.
78. Jenson, J. W., **D. R. MacAyeal**, P. U. Clark, C. Ho and J. C. Vela, 1996. Numerical modeling of subglacial sediment deformation: Implications for the behavior of the Lake Michigan Lobe, Laurentide Ice Sheet. *Journal of Geophysical Research*, 101, 8717-8728.
79. Huybrechts, P., T. Payne, and 14 others (incl. **D. R. MacAyeal**), 1996. The EISMINT benchmarks for testing ice-sheet models. *Annals of Glaciology*, 23, 1-12.
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