

Curriculum Vitae

Ted Maksym

Assistant Scientist
Department of Applied Ocean Physics and Engineering
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Woods Hole Oceanographic Institution
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EDUCATION

Ph.D. Geophysics, University of Alaska Fairbanks, USA, 2001
Geophysics Curriculum, University of British Columbia, Canada, 1994
B.Sc.E. Engineering Physics, Queen's University, Canada, 1992

PROFESSIONAL EXPERIENCE

Assistant scientist, Woods Hole Oceanographic Institution, 2011-present
Sea ice physicist, British Antarctic Survey, 2006-2011
National Academies NRC Research Associate, NASA GSFC, 2005-2006
Assistant Professor, CNMOC Chair in Remote Sensing, Department of Oceanography,
United States Naval Academy, 2003-2005
UCAR Visiting Scientist, National Ice Center, 2001-2003

PROFESSIONAL AFFILIATIONS

American Geophysical Union
International Glaciological Society

RESEARCH INTERESTS

Sea ice geophysics
Sea ice thickness distribution (in situ and satellite), properties and processes
Use of autonomous vehicles under ice
Ice-climate interactions and ice interannual variability
Autonomous monitoring of ice growth and decay and physical-biological interactions

PROFESSIONAL ACTIVITIES

WHOI:

Ted Maksym Vita

Ocean and Climate Change Institute Advisory Committee, 2013-present

EXTERNAL:

Lead reviewer for NASA ICESat-2 sea ice Algorithm Theoretical Basis Document, Feb, 2015.

Working group member, Antarctic Sea Ice Processes Ecosystems and Climate (ASPeCt), 2011 - present

Panel member, International Antarctic Buoy Program, 2012 – present

NASA ICESat/Cryosat review panel member

NASA Oceans and Ice review panel member (twice)

NSF Arctic System Science review panel member

NSF collaborative research in mathematics and geophysics review panel member

Nordforsk Nordic centers of excellence review panel member

Ad-hoc reviewer for NASA, NSF

Reviewer for *Journal of Geophysical Research*, *Geophysical Research Letters*, *Deep Sea Research*, *Antarctic Science*, *Annals of Glaciology*, *Polar Record*, *Journal of Atmosphere and Ocean Technology*, *Cold Regions Science and Technology*, *Climate Dynamics*, *Global Biogeochemical Cycles*, *IEEE Transaction on Geoscience and Remote Sensing*

PEER REVIEWED PUBLICATIONS

Williams, G*., **T. Maksym***, J. Wilkinson*, C. Kunz, P. Kimball, H. Singh (2015), Thick and deformed Antarctic sea ice mapped with autonomous underwater vehicles, submitted to *Nature Geoscience*, 8, 61–67, doi:10.1038/ngeo2299. * joint lead authors.

Stammerjohn, S., **T. Maksym**, K. R. Arrigo, K. E. Lowry, X. Yuan, M. Raphael, R. A. Massom, E. Randall-Goodwin, R. M. Sherrell, and P. L. Yager, Seasonal sea ice changes in the Amundsen Sea, Antarctica, submitted to *Elementa (in revision)*

Bassett, C., A. Lavery, **T. Maksym** (2014), Laboratory measurements of high-frequency, acoustic broadband backscattering from sea ice and crude oil (Backscattering from sea ice and oil), *JASA-EL 137(1)*, EL32-EL38.

Ackley, S.F., D.K. Perovich, **T. Maksym**, B. Weissling, Z. Yao, H. Xie, and Z. Qian, Surface flooding of Antarctic summer sea ice, submitted to *Ann. Glaciol.* (in revision).

Wilkinson, J., T. Boyd, B. Hagen, **T. Maksym**, S. Pegau, C. Roman, H. Singh, L. Zabilansky (2014), Detection and quantification of oil under sea ice: the view from below, *Cold Regions Science and Technology*, in press. DOI: 10.1016/j.coldregions.2014.08.004

Kwok, R. and **T. Maksym** (2014), Snow depth of the Weddell and Bellingshausen ice cover from IceBridge surveys in 2010 and 2011: An examination, *J. Geophys. Res.*, 119, 4141–4167, doi:10.1002/2014JC009943.

Williams, R., N. Kelly, O. Boebel, A.S. Friedlaender, H. Feindt-Herr, K.-H. Kock, L.S. Lehnert, **T. Maksym**, J. Roberts, M. Scheidat, U. Siebert, A. S. Brierley (2014), Counting whales in a challenging, changing environment, *Nature Scientific Reports*, 4, doi:10.1038/srep04170.

Jackson, K., J. Wilkinson, **T. Maksym**, D. Meldrum, J. Beckers, C. Haas, and D. MacKenzie (2013), A Novel and Low Cost Sea Ice Mass Balance Buoy, *J. Atmos. Oceanic Technol.*, 30, 2676–2688, doi:10.1175/JTECH-D-13-00058.1

Maksym, T., S.E. Stammerjohn, S. Ackley, and R. Massom (2012), Antarctic sea ice—A polar opposite?, *Oceanography* 25(3):140–151, doi: 10.5670/oceanog.2012.88.

Turner, J., **T. Maksym**, T. Phillips, G. J. Marshall, and M. P. Meredith (2012), The impact of changes in sea ice advance on the large winter warming on the western Antarctic Peninsula. *Int. J. Climatol.* doi: 10.1002/joc.3474.

Leonard, K.C., and **T. Maksym** (2011), The importance of wind blown snow redistribution to accumulation on and mass balance of Bellingshausen Sea ice, *Annals of Glaciology*, 52(57), 271-278.

Stammerjohn, S., **T. Maksym**, P. Heil, R.A. Massom, M. Vancoppenolle, K.C. Leonard (2011), The influence of winds, surface temperature and precipitation anomalies on Antarctic regional sea ice conditions during IPY 2007, *Deep-Sea Res. II*, 58, 999-1018.

Markus, T., R. Massom, A. Worby V. Lytle, N. Kurtz, and **T. Maksym** (2011), Snow depth and sea ice roughness in East Antarctica from in-situ and multiple satellite data, *Annals of Glaciology*, 52(57), 242-248.

Turner, J., J. C. Comiso, G. J. Marshall, T. A. Lachlan-Cope, T. Bracegirdle, **T. Maksym**, M. P. Meredith, Z. Wang (2009), Non-annular atmospheric circulation change induced by stratospheric ozone depletion and its role in the recent increase of Antarctic sea ice extent, *Geophys. Res. Lett.*, 36, L08502, doi:10.1029/2009GL037524.

Maksym, T. and T. Markus (2008), Antarctic sea ice thickness and snow-to-ice conversion from atmospheric reanalysis and passive microwave snow depth, *Journal of Geophysical Research*, 113, C02S12, doi:10.1029/2006JC004085.

Maksym, T., L. Toudal, M. D. Coon, and M. L. Van Woert (2002), Operational modelling of the autumn ice advance in the Barents Sea, in *Ice in the Environment: Proceedings of the IAHR International Symposium on Ice 3*, Dunedin, New Zealand.

Meier, W. N., **T. Maksym**, and M. L. Van Woert (2002), Evaluation of arctic operational passive microwave products: a case study in the Barents Sea during October 2001, in *Ice in the Environment: Proceedings of the IAHR International Symposium on Ice 3*, Dunedin, New Zealand.

Maksym, T. and M. O. Jeffries (2001), Phase and compositional evolution of the flooded layer during snow ice formation on Antarctic sea ice, *Annals of Glaciology*, 33, 37-44.

Maksym, T. and M. O. Jeffries (2000), A one-dimensional percolation model of flooding and snow ice formation on Antarctic sea ice, *Journal of Geophysical Research*, 105, 26,313-26,331.

Jeffries, M. O., K. Morris, **T. Maksym**, N. Kozlenko, and T. Tin (2001), Autumn sea ice thickness, ridging and heat flux variability in and adjacent to Terra Nova Bay, Ross Sea, Antarctica, *Journal of Geophysical Research*, 106, 4437-4448.

Jeffries, M. O., H. R. Krouse, B. Hurst-Cushing, and **T. Maksym** (2001), Snow ice accretion and snow cover depletion on Antarctic sea ice floes, *Annals of Glaciology*, 33, 51-60.

OTHER PUBLICATIONS

Maksym, T., H. Singh, C. Bassett, A. Lavery, L. Freitag, F. Sonnichsen, J. Wilkinson (2014), Oil spill detection and mapping under Arctic sea ice using autonomous underwater vehicles, Bureau of Safety and Environmental Enforcement, 99 pp. <http://www.bsee.gov/Research-and-Training/Oil-Spill-Response-Research/Projects/Project1000/>.

Bassett, C., A. Lavery, **T. Maksym**, J. Wilkinson (2014), Laboratory measurements of high-frequency, broadband acoustic scattering of growing sea ice and oil beneath sea ice. *Proceedings of meeting on acoustics*, 21, 070008, <http://dx.doi.org/10.1121/1.4893927>.

Wilkinson, J., **T. Maksym**, C. Bassett, A.C. Lavery, H. Singh, D. Chayes, P. Elosegui, P. Wadhams, K. Ulrich-Evers, P. Jochmann (2014), Experiments on the detection and movement of oil spilled under sea ice, *Proceedings of the HYDRALAB-IV Joint User Meeting*, Lisbon, Portugal, July 2-4, 2014.

Wilkinson, J. **T. Maksym**, and H. Singh (2013), Capabilities for detection of oil spills under sea ice from autonomous underwater vehicles, Report for Joint Industry Program on oil spill detection and mapping in low visibility and ice: focus on undersea remote sensing, 104 pp, <http://www.arcticresponsetechnology.org/project-updates/oil-spill-detection-and-mapping-in-low-visibility-and-ice/report-on-oil-spill-detection-and-mapping-in-low-visibility-and-ice-under-sea-remote-sensing>.

Williams, G. D., **T. Maksym**, J. Wilkinson, C. Kunz, E. Trujillo, A. Steer, P. Kimball, R. Massom, K.M. Meiners, K. Leonard, C. Murphy, P. Heil, J. Lieser, T. Lachlan-Cope, and

H. Singh (2013), Beyond point measurements: 3-D characterization of sea ice floes, submitted to *EOS, Trans. Am. Geophys. Union*. Vol. 94, No. 7(12).

Shepson, P. B., P.A. Ariya, C.J. Deal, D. J. Donaldson, T. A. Douglas, B. Loose, **T. Maksym**, P. A. Matrai, L. M. Russell, B. Saenz, J. Stefels, N. Steiner (2012), Changing polar environments: Interdisciplinary challenges, *Eos Trans. AGU*, 93(11), 117, doi:10.1029/2012EO110001.

Maksym, T. (2006), The Marginal Ice Zone, in *The Encyclopedia of the Antarctic*, B. Riffenbaugh, ed., Routledge, Cambridge.

Maksym, T. (2004), Book review of Sea Ice: An Introduction to Its Physics, Chemistry, Biology, and Geology, D.N. Thomas and G.S. Dieckmann, eds. 2003. *Polar Record*, 4.

Maksym, T., M. L. Van Woert, W. Dierking, S. V. Nghiem (2002), Sea ice microstructural characteristics in the Barents Sea in autumn: relevance to microwave remote sensing, *Proceedings Int'l Geoscience and Remote Sensing Symposium*, Toronto, Canada, June 24-28.

E. Garcia, **Maksym, T.**, M. Simard, W. Dierking, M. L. Van Woert, S. V. Nghiem, K. St Germain (2002), A comparison of sea ice field observations in the Barents Sea marginal ice zone with satellite data, *Proceedings Int'l Geoscience and Remote Sensing Symposium*, Toronto, Canada, June 24-28.

Maksym, T. and M. O. Jeffries (1998), Bulk salinity characteristics of first-year sea ice in the Pacific sector of the southern oceans, *Antarctic Journal of the U.S.*, 33, 99-101.

Jeffries, M. O., B. Hurst-Cushing, H. R. Krouse, and **T. Maksym** (1998), The role of snow in the thickening and mass budget of first-year floes in the eastern Pacific sector of the Antarctic pack ice, *Geophysical Institute Report, UAG R-327*, University of Alaska, Fairbanks.

CRUISE PARTICIPATION AND ICE CAMPS

Mar 2014	ONR MIZ ice camp, Beaufort Sea
Sep 2013	USCGC Healy, Chukchi Sea
Feb 2013	USCGC Hollyhock, Lake Huron
Sep-Nov 2012	SIPEX II, R/V Aurora Australis, Sep-Nov
Nov 2010	HMS James Clark Ross, Bellingshausen Sea, (<i>Chief Scientist</i>)
Jan-Feb 2009	NBP 09-01, R/V Nathaniel B. Palmer, Amundsen Sea
Feb-Apr 2007	HMS James Clark Ross, Bellingshasen Sea
Apr 2003	ICEX Ice camp, Beaufort Sea
Sep-Oct 2001	Remote sensing validation USCGC Healy, Barents Sea
May-Jun 1998	NBP 98-03, R/V Nathaniel B. Palmer, Ross Sea
Jul-Sep 1995	NBP 95-05, R/V Nathaniel B. Palmer, Ross, Amundsen, and Bellingshausen Seas

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May-Jun, 1995 NBP 95-03, R/V Nathaniel B. Palmer, Ross Sea

TEACHING AND SUPERVISION

Polar Oceanography and Meteorology, 2003-2004, USNA
Environmental Remote Sensing, 2004-2005, USNA
Honors Independent Research Supervision, 2003-2005, USNA

Till Wagner, PhD (secondary supervisor), 2009-2011, University of Cambridge
Victoria Hamilton Morris, Post-doc, 2011-2012, British Antarctic Survey
Camil Hamel, Summer Student Fellow (secondary supervisor), June-August, 2012
Chris Bassett, Post-doc (secondary supervisor), 2013-present

INVITED LECTURES

- 2014 “Snow distribution on Antarctic sea ice: precipitation, accumulation, and connections to sea ice thickness from in situ and NASA IceBridge observations”, AGU fall meeting, Dec 15-19.
- 2014 “State of polar sea ice and implications for air-sea interaction”, OCB summer science workshop, Woods Hole, July 21-24.
- 2014 “The Changing Antarctic Sea Ice Environment – Knowns and Unknowns”, MORSS colloquium, Wood Hole, May 4-6.
- 2010 “Antarctic sea ice processes and climate variability: unknowns and observational needs”, Southern Ocean CLIVAR meeting, Southampton, UK, June 14-15.
- 2010 “Role of snow in the evolution of Antarctic sea ice” IPAM workshop on mathematics of sea ice, UCLA, May 10-11.
- 2008 “Snow, sea ice, and the holy grail”, University of Waterloo, Feb 5.
- 2007 “The mass balance of snow on Antarctic sea ice”, University College London, May.
- 2007 “Past, present, and future changes in Arctic and Antarctic sea ice: possible causes and attribution”, DEFRA, UK, London.

WORKSHOPS AND OTHER ACTIVITIES

Towards an Integrated Retrieval of Antarctic Sea Ice Volume workshop, International Space Studies Institute, Bern, June 2014
Space-borne monitoring of polar sea ice workshop, International Space Studies Institute, Bern, June 2012
Ocean, Atmosphere, and Sea Ice (OASIS) workshop, Telluride, CO, June 2011
Monitoring of Antarctic sea ice during IPY workshop, International Space Studies Institute, Bern, June 2010

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Interviews for NPR, BBC, Reuters, ABC, and other national and international radio, television, print and online news outlets.