

John Yackel

Curriculum Vitae

*Earth Sciences 444
University of Calgary
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Personal information

Nationality	Canadian
Birth Date	April 6, 1967
Place of Birth	Regina, Saskatchewan, Canada
Research platforms	ORCID (0000-0003-1110-7631) Google Scholar ResearchGate
h-index	30 (Google Scholar, ResearchGate)

Research foci

- Satellite Remote Sensing of the Cryosphere
- Sea-Ice-Atmosphere-Ocean Interactions
- Microwave and SAR interactions w/snow-covered sea ice

Education

- 09/1995 – 04/2001 **Ph.D.**, Centre for Earth Observation Science, University of Manitoba, Winnipeg, Manitoba, Canada. PhD thesis title "On the use of synthetic aperture radar (SAR) for estimating the thermodynamic evolution of snow covered first-year sea ice". *Supervisor: Dr. David Barber.*
- 09/1991 – 04/1995 **M.Sc.**, Department of Geography, University of Calgary, Calgary, Alberta, Canada. M.Sc. thesis title "An analysis of the spatial and temporal character of the Chinook in southern Alberta". *Supervisor: Dr. Lawrence Nkeemdirim.*
- 09/1987 – 04/2001 **B.A (Honours)**, Department of Geography, Wilfrid Laurier University, Waterloo, Ontario, Canada. B.A. Honours thesis title "An analysis of temperature variability in southern Ontario in recent years". *Supervisor: Dr. Michael English.*

Work experience

- 07/2013 – present **Professor**, Department of Geography, University of Calgary
- 07/2006 – 06/2013 **Associate Professor**, Department of Geography, University of Calgary
- 07/2000 – 06/2006 **Assistant Professor**, Department of Geography, University of Calgary
- 07/1995 – 06/2000 **Research Associate**, Centre for Earth Observation Science, University of Manitoba
- 10/1993 – 05/1995 **Radar Analyst**, Intermap (*formally Intera*) Technologies, Calgary, Alberta

Contributions to conferences

since 1992 Participation in 26 international conferences (*21 oral talks, 28+ posters, 5 session chairs*) namely, *International Geoscience and Remote Sensing Symposium, International Glaciological Symposium; ArcticNET annual science meeting, American Geophysical Union annual meeting, ESA Living Planet, among others.*

Recent Invited talks

- 09/2022 **Data and early results of a snow thickness validation effort along an optimal Cryo2Ice track on landfast first-year sea ice in the Canadian Archipelago.** *Invited Talk: Yackel, J., J. Stroeve, H.M. Lam, M. Saha, V. Nandan, [ESA Copernicus CRISTAL MAG meeting](#), Noordwijk, The Netherlands.*
- 09/2022 **The joint Copernicus expansion missions CIMR, CRISTAL and ROSE-L sea ice experiment (CEMSIE).** *Invited Talk: Yackel, J., R. Tonboe, V. Nandan, J. Stroeve, R. Scharien and G. Spreen. [ESA Copernicus CRISTAL MAG meeting](#), Noordwijk, The Netherlands.*
- 09/2021 **Climate change impacts on the Arctic Physical Environment (Special Session).** *Invited Talk: Yackel, J., (for D. Barber). [Coastal Zone Canada 2021 Conference \(online\)](#), Inuit Qaujimatuaqangit: Planning and Preparing for the Future.*
- 08/2019 **Canadian Scattermeters (CanScats) for snow-covered sea ice process studies during MOSAiC.** *Invited Talk: Yackel, J., R. Scharien, C. Duguay, J. Stroeve, G. Spreen and D. Barber. [IGS International Symposium on Sea Ice](#), Winnipeg, MB.*

Field campaigns (*recent and selected*)

- 04/2022 **Cryo2Ice sea ice field experiment, Cambridge Bay (CHARS), Dease Strait, Nunavut.** Collection of snow thickness data on seasonal sea ice along an optimal Cryo2Ice transect via helicopter.
- 12/2021 **Churchill sea ice field experiment, Hudson Bay, Churchill (CNSC), Manitoba.** Collection of snow thickness data on seasonal sea ice coincident with surface-based KuKa radar system w/ P.I. J. Stroeve.
- 2019-2020 **MOSAIC drift experiment, Research Vessel Polarstern, Arctic Ocean.** Non-participating co-Principal Investigator on the *Remote Sensing Team*; financially supported and supervised direct participation of Dr. Vishnu Nandan (Leg 2) and Dr. Mallik Mahmud (Leg 4).
- 04/2018 **Cambridge Bay sea ice field experiment, Cambridge Bay (CHARS), Dease Strait, Nunavut.** Collection of snow thickness, physical and dielectric property data on seasonal sea ice coincident with surface-based C- and L-band scatterometer systems (3 weeks).
- 05/2017 **International Partnerships for Excellent Education and Research (INTPART) Arctic Field Summer School: Norway-Canada-USA collaboration ship-based sea ice field school at Svalbard and Tromso, Norway and cruise to the Arctic ice pack (to 81N) organized by University of Tromso – CIRFA w/M. Grunskog, C. Brekke, S. Gerland, A. Doulgeris, and H. Eicken. R/V Lance (3 weeks).**
- 1996-2016 **Various Canadian Arctic sea ice field experiments to Resolute Bay, Cambridge Bay, Churchill and Finland.** Surface-based microwave scatterometer measurements over landfast first-year sea ice including twin otter and helicopter measurements of snow thickness distributions on sea ice and assessment using SAR data. *Sea ice camp and ship-based (CCGS Louis St. Laurent) campaigns (24+ weeks).*
- 2007-2008 **International Polar Year (IPY) – Circumpolar Flaw Lead (CFL) System Study, Amundsen Gulf, Canada (Team 2 – Sea Ice)** Microwave scatterometer measurements over landfast first-year sea ice in Franklin Bay; helicopter supported measurements of snow thickness distributions on sea ice and assessment using SAR data, *Canadian research icebreaker CCGS Amundsen (4 weeks).*
- 2003-2004 **Canadian Arctic Shelf Exchange Study (CASES) overwinter project, Amundsen Gulf, Canada** Microwave scatterometer measurements over landfast first-year sea ice in Franklin Bay including helicopter supported measurements of snow thickness distributions on sea ice and assessment using SAR data, *Canadian research icebreaker CCGS Amundsen (7 weeks).*
- 1998 **The International North Water (NOW) Polynya study, north Baffin Bay, Canada/Greenland** SAR and snow thickness measurements over landfast first-year sea ice surrounding the NOW polynya helicopter supported measurements of snow thickness distributions on sea ice and assessment using SAR data, *CCGS Pierre Radisson (6 weeks).*

Grantsmanship (*recent and selected*)

- 2017 **The Churchill Marine Observatory (CMO)**, Co-P.I. *Canada Foundation for Innovation (Innovation Fund)*. Grant amount: \$2,500,000.
- 2017 **The Churchill Marine Observatory**, *Alberta Innovation (Research Capacity Program) matching contribution to CFI Innovation award for CMO. P.I.* Grant amount: \$381,564.
- 2018-2022 **The Churchill Marine Observatory**, *Canada Foundation for Innovation (Infrastructure Operating Funds)* Grant amount: \$200,000.
- 2017-2022 **NSERC Discovery Grant**, *Climate forcing of physical and electrical properties of snow-covered sea ice.* Grant amount: \$135,000 (3 previous and continuous NSERC DG awards 2001-2016).
- 2020 **NSERC Research Tools and Infrastructure Grant**, *Snow property characterization for improved radar altimetry estimates of sea ice thickness.* Grant amount: \$132,349 (3 previous NSERC RTI awards).
- 2019 **NSERC ShipTime Grant**, *Canadian Scatterometers (CanScats) for snow covered sea ice process studies during MOSAiC.* Polarstern Berth fees. Grant amount: \$234,861.
- 2014-2019 **ArcticNET** - Phase III and IV (NSERC NCE 2013-2018) and **MEOPAR** – Phase II (NSERC NCE). Grant amount: \$20K/yr. (*ArcticNET*) and \$25K/yr. (*MEOPAR*).
- 2002-2022 **Environment and Climate Change Canada** and **Canadian Ice Service** (cash and *in-kind* satellite imagery) and **PCSP-NRCan/POLAR Knowledge Canada**. *Use of surface and satellite microwave remote sensing for snow covered sea ice property estimation (in-kind logistical support).* Grant amounts: ~ \$25K/yr.
- 2020 **Canadian Space Agency - Flights and Fieldwork for the Advancement of Science and Technology**. *Surface-based Canadian microwave Scatterometer measurements (CanScats) during the MOSAiC international Arctic drift expedition.* Grant amount: \$100,000 (R. Scharien, co-I).
- 2021 **France Canada Research Fund**, French Ministry of Research. *Accurate pan-Arctic Sea Ice Thickness Retrievals from State-of-the Art Satellite Radar Systems.* Grant amount: \$30,000 (S. Fleury, co-I).
- 2004-2012 **ArcticNET**- NSERC NCE – *Use of surface and satellite microwave remote sensing for snow covered sea ice property estimation* Phases I and II. Grant amount: \$15K/yr.
- 2003 **CFI New Opportunities Fund w/Alberta Innovation matching funds** and **CFI Infrastructure Operating Funds**, *C-band scatterometer investigations of snow covered first-year sea ice.* Grant amount: \$460,000.
- 2023-2028 **NSERC Discovery Grant**, *Multi-sensor, multi-frequency remote sensing of snow for improved sea ice thickness retrievals.* Grant request: \$225,000 (*in review*) (3 previous and continuous NSERC DG awards 2001-2016).
- 2023-2028 **NSERC Northern Research Supplement**, *Multi-sensor, multi-frequency remote sensing of snow for improved sea ice thickness retrievals.* Grant request: \$100,000 (*in review*) (3 previous NSERC NRS awards 2001-2016).
- 2023-2028 **NSERC Research Tools and Infrastructure Grant**, *C-Scat: Enhancement of a highly-effective surface-based C-band polarimetric scatterometer for snow on sea ice studies.* Grant request: \$162,500 (*in review*) (3 previous NSERC RTI awards 2001-2016).
- 2023 co-applicant w/Phillip Ferguson (CEOS, University of Manitoba) on **Canadian Space Agency CubeSats Initiative in Canada for STEM (CUBICS)** Announcement of Opportunity. *IceCube: Making Space Accessible for Arctic Climate Change Research.* Grant request: \$349,991 (*in review*).
- 2023 co-applicant w/Eric Collins (CEOS, University of Manitoba) on **Natural Resources Canada Multi-Partner Research Initiative Funding Opportunities**. *IceCube: Making Space Accessible for Arctic Climate Change Research.* Grant request: \$3,762,042 (*in review*).
- 2023 Principal Applicant on **Canadian Space Agency Research Opportunities in Space Science 2022-2027** Announcement of Opportunity. *The joint Copernicus expansion missions CIMR, CRISTAL and ROSE-L sea ice experiment (CEMSIE).* Grant request: \$225,000 (*in preparation – to be submitted June 2023*).

Teaching experience

I have taught 14 different courses over the past 22+ years. Please see my 2-page statement of teaching philosophy and courses taught.

Doctoral Supervision

I have graduated 8 Ph.D. students over the past 22+ years. Each of my Ph.D. graduates produced a minimum of *three* lead-author publications from their thesis.

Kiledar Singh Tomar (2022 - present) w/ D. Isleifson co-supervisor. Mesocosm studies of multi-frequency polarimetric microwave remote sensing of snow-covered sea ice. *Expected defense Nov '25*.

Hoi Ming Lam (2019 – present). Snow thickness estimation on first-year sea ice using radar and lidar altimetry from CryoSat-2 and ICESat-2. *Expected defense Dec '23*.

Dr. Mallik Mahmud (2021) - *University of Calgary Killam, AITF and Vanier Scholar and NSERC PDF*

Dr. Vishnu Nandan (2018) - *University of Calgary Eyes High Doctoral Scholar, RA and PDF (w/J. Stroeve)*

Dr. Mark Christopher Fuller (2016) – *past Research Associate, University of Manitoba/ Calgary*

Dr. Jagvijay Gill (2014) – *Director of Software Engineering, Planet, Vancouver, B.C.*

Dr. Randall Scharien (2010) – *Associate Professor, Dept of Geography, University of Victoria, Victoria, B.C.*

Dr. Adrienne Tivy (2009) – *Physical Science Specialist, Canadian Ice Service, Ottawa, Ontario*

Dr. Torsten Geldsetzer (2009) – *Environmental Scientist, NRCan & Adjunct. Assoc. Prof., University of Calgary*

Dr. Stephen Howell (2007) – *Research Scientist, Environment and Climate Change Canada, Downsview, Ontario*

Masters and Undergraduate Supervision

I have graduated 30+ M.Sc. and MGIS students over the past 22 years.

Syeda Maknun, M.Sc.

Rory Armstrong, M.Sc.

Keegan Shaw, MGIS

Mallik Mahmud, M.Sc.

Randall Scharien, M.Sc.

Nidhi Bishnoi, MGIS

Stephen Howell, MGIS

Carrie Breneman, M.Sc.

Mark Christopher Fuller, M.Sc.

Brent Else, M.Sc.

Service to Professional/Scientific Community (*recent and select*)

2018-present Associate Editor: *The Cryosphere* (45+ papers in TCD since 2018).

1999-present Journal Reviewer: *Geophysical Research Letters, Remote Sensing of Environment, IEEE TGARS, Journal of Geophysical Research-Oceans, Journal of Climate, The Cryosphere, Remote Sensing, Remote Sensing of Environment Annals of Glaciology, Journal of Selected Topics in Applied Earth Observation, Journal of Physical Oceanography, Canadian Journal of Remote Sensing, International Journal of Remote Sensing, Journal of Hydrology, Atmosphere-Ocean and Elementa.*

1999-present Grant/Proposal Reviewer: *NASA, NSERC, SSHRC, NSF, NERC, CSA, ESA, Environment Canada, DFO, Norwegian/Swedish/German/France/Australian and Danish Research Councils. Of note, was my service on the inaugural NSERC NFRF sub-committee in Ottawa Mar. 2018 60+ hours.*

2018-present Mission Advisory Group (MAG) member for ESA CRISTAL satellite mission (*expected launch 2027*), twice annual meetings at ESA-ESTEC, Noordwijk, The Netherlands.

2004-present Conference Chair: *International Glaciological Symposium (IGS), International Geoscience and Remote Sensing Symposium (IGARSS), American Geophysical Union, ArcticNET annual meeting.*

- 2008-2011 Member, Advisory Council, *Canadian Cryospheric Information Network* (E. LeDrew PI).
- 2002-2006 Member, The Integrated Global Observing Strategy (IGOS) Partnership. *IGOS Cryosphere Theme and contributing author.* (J. Key PI). *Travel to multiple meetings in Canada, US and the Netherlands.*

Service to Department and University

- 2012-2017** **Head, Department of Geography, University of Calgary**
- 2020-present Member, Graduate Admissions and Scholarship Committee, Department of Geography
- 2003-2011 Member, Graduate Admissions and Scholarship Committee, Department of Geography
- 2011-2017 Member, University Systems Enabling Research (USER) Task Force, University of Calgary. <https://www.ucalgary.ca/research/strategic-initiatives/user-task-force>
- 2003-2011 Member, University of Calgary Graduate Scholarship Committee (NSERC). *Bi-annually review ~ 40-50 M.Sc. and Ph.D. (+Vanier) applications from disparate departments and rank according to merit. This work typically occurs in October of each year, culminating in two 2-hour meetings. Time commitment is ~40 hours/yr.* <https://grad.ucalgary.ca/awards>
- 2002-present Member, Northern Scientific Training Program (NSTP) review committee, Arctic Institute of North America (AINA), University of Calgary. *Bi-annual review ~20 student applications from disparate departments and rank according to merit. This work typically occurs in November, culminating in two 2-hour meetings. Time commitment is ~20 hours/yr.* <https://arctic.ucalgary.ca/northern-scientific-training-program>
- 2009-2011 Acting Director, Masters of Geographic Information Systems Program, Department of Geography, University of Calgary. <https://grad.ucalgary.ca/future-students/explore-programs/geography-mgis-course>
- 2004-present Research Associate, Arctic Institute of North America (AINA), University of Calgary. *Consulting for Arctic sea ice commentary, strategic research planning and public forum speaking.* <https://arctic.ucalgary.ca/research-associate/john-james-yackel>
- 2006-present Research Affiliate, Centre for Earth Observation Science, University of Manitoba. *Collaborative research activities with CEOS researchers conducting sea ice research at SERF, OSIM-CMO and other Arctic field locations.* <https://umanitoba.ca/faculties/environment/departments/ceos/people/1361.html>
- 2002-present Internal and External Examiner on 67 MA, M.Sc., MGIS, Ph.D. thesis proposal, candidacy examinations and Doctoral Dissertation Exams in Geography and (*Geosciences, Geomatics Engineering, Civil Engineering, Electrical and Computer Engineering, Environmental Science, Anthropology and Archeology, Biological Sciences, Physics and Astronomy, Mathematics and Statistics, History*).

Membership of scientific societies

- European Geosciences Union (EGU)
- American Geophysical Union (AGU)
- International Glaciological Society (IGS)

Outreach (*select - 2010 to 2022*)

I have regularly contributed to science communication outreach activities via public presentations, radio, television and newspaper interviews and academic institution seminars and media reports

- 2022 AKROSS: Digging into Arctic snow to improve satellite estimates of ice. *ESA Blog*.
<https://blogs.esa.int/campaignearth/2022/06/10/akross-digging-into-arctic-snow-to-improve-satellite-estimates-of-ice/>
- 2021 Online Seminar presentation. The salient role of saline snow on seasonal sea ice. UiT The Arctic University of Norway: Centre for Integrated Remote Sensing and Forecasting for Arctic Operations (CIRFA).
https://sa.uit.no/tavla/artikkel/724221/cirfa_seminar_the_salient_role_of_saline_snow_on
- 2021 Melting Arctic sea ice.
<https://www.alive.com/lifestyle/melting-arctic-sea-ice/>
- 2019 U of C researchers conclude Arctic sea ice vanishing more quickly than thought *Calgary Herald*.
<https://calgaryherald.com/news/local-news/u-of-c-researchers-conclude-arctic-sea-ice-vanishing-more-quickly-than-thought>
- 2019 Is the future of the world at the top of the world? Climate change through the lens of the Arctic.
<https://explore.ucalgary.ca/climate-change-permafrost-arctic>
- 2017 Arctic sea ice may be thinning faster than scientists initially predicted *Explore U Calgary*.
<https://ucalgary.ca/news/arctic-sea-ice-may-be-thinning-faster-scientists-initially-predicted>
- 2017 Arctic sea ice may be declining faster than expected *Reuters*.
<https://gcaptain.com/arctic-sea-ice-may-be-declining-faster-than-expected-study/>
- 2016 Public Presentation, The Society of Naval Architects and Marine Engineers (SNAME) Calgary Branch. *The Churchill Marine Observatory*.
<https://communities.sname.org/arcticsection/archived/new-item/new-item>
- 2015 New Arctic research station expands oil spill studies *U Calgary News*.
<https://ucalgary.ca/news/new-arctic-research-station-expands-oil-spill-studies>
- 2015 Arctic oil spills to be studied at Churchill research facility *CBC News*.
<https://www.cbc.ca/news/canada/calgary/arctic-oil-spills-to-be-studied-at-churchill-research-facility-1.3160330>
- 2015 Arctic Soundings. Public Presentation *Disappearing Sea Ice. University of Calgary*.
<https://go.ucalgary.ca/arctic-soundings>
- 2015 Arctic sea ice volume can bounce back during cooler summers *CBC News*.
<https://www.cbc.ca/news/science/arctic-sea-ice-volume-can-bounce-back-during-cooler-summer-1.3163741>
- 2012 Ice study measures melt *CTV News*.
<https://calgary.ctvnews.ca/ice-study-measures-melt-1.969877>
- 2012 Quirks & Quarks Holiday radio Question Show w/ Bob McDonald. *Why is the Arctic melting differently than Antarctica?*
<https://www.cbc.ca/radio/quirks/quirks-quarks-holiday-question-show-1.2843094> (6:00-12:00)
- 2012 Arctic Sea Ice Coverage 'At Lowest level for a million years' says Researcher *HuffPost*.
https://www.huffingtonpost.co.uk/2012/09/25/arctic-sea-ice-at-lowest-for-a-million-years_n_1912084.html
- 2010 Disappearing sea ice: what's to worry about? *Calgary City News*.
<https://calgary.citynews.ca/2010/02/24/disappearing-sea-ice-whats-to-worry-about/>

Additional news items

<https://thegauntlet.ca/2017/11/24/u-of-c-research-suggests-arctic-sea-ice-thickness-lower-than-previously-thought>
<https://www.eurekaalert.org/multimedia/595512>

Peer-reviewed journal publications (70+) (last 6+ years listed here)

Remainder not listed, can be found at <https://scholar.google.ca/citations?user=KVv7rVAAAAAJ&hl=en>

- 2023 Jensen, D.A., **Nandan, V.**, Mahoney, A.R., **Yackel, J.J.** and Resler, L.M. (2023). Landfast sea ice break out patterns in the norther Bering Sea observed from C-band Synthetic Aperture Radar. *International Journal of Applied Earth Observation and Geoinformation*. 117, 103183. <https://doi.org/10.1016/j.jag.2023.103183>
- **Nandan, V.**, Willatt, R., Mallett, R., Stroeve, J., **Geldsetzer, T.**, Scharien, R., Tonboe, R., Landy, J., Clemens-Sewall, D., Jutila, A., Wagner, D. N., Krampe, D., Huntemann, M., **Yackel, J.**, **Mahmud, M.**, Jensen, D., Newman, T., Hendricks, S., Spreen, G., Macfarlane, A., Schneebeli, M., Mead, J., Ricker, R., Gallagher, M., Duguay, C., Raphael, I., Polashenski, C., Tsamados, M., Matero, I., and Hoppman, M. (2023). Wind Transport of Snow Impacts Ka- and Ku-band Radar Signatures on Arctic Sea Ice, *The Cryosphere*, 17, 2211-2229. <https://doi.org/10.5194/tc-17-2211-2023>
 - **Geldsetzer, T.**, **Yackel, J.J.**, **Tomar, K.S.**, **Mahmud, M.**, **Nandan, V.**, and **Kumar, S.** (2023). Sea ice melt pond onset detection using dual co-polarized Ku-band backscatter. *Remote Sensing of Environment* RSE-D-23-00504.
 - **Nandan, V.**, Willatt, R., Mallett, R., Stroeve, J., **Yackel, J.J.**, Harasyn, M., Isleifson, D., and **Fuller, M.C.** (2023). Impact of Brine on Ku- and C-band Microwave Backscatter Signatures of Thin Snow-Covered Experimental Sea Ice. *Journal of Glaciology* (in review).
 - **Nandan, V.**, Tonboe, R., Stroeve, J., Makynen, M., Kern, S., **Geldsetzer, T.**, **Yackel, J.**, Laverigne, T., Mallett, R., Willatt, R., **Mahmud, M.** & Pedersen, L.T. (2023). Impact of snow salinity on passive microwave signatures of snow-covered sea ice. *Environmental Research Letters* (in review).
- 2022 Stroeve, J., **Nandan, V.**, Willatt, R., Dadic, R., Rostosky, P., Gallagher, M., Mallett, R., Barrett, A., Hendricks, S., Tonboe, R., McCrystall, M., Serreze, M., Thielke, L., Spreen, G., Newman, T., **Yackel, J.**, Ricker, R., Tsamados, M., Macfarlane, A., Hannula, H.-R., and Schneebeli, M. (2022) Rain on Snow (ROS) understudied in sea ice remote sensing: a multi-sensor analysis of ROS during MOSAiC (Multidisciplinary drifting Observatory for the Study of Arctic Climate), *The Cryosphere*, 16, 4223–4250. <https://doi.org/10.5194/tc-16-4223-2022>
- Confer, K. L., Jaeglé, L., Liston, G. E., Sharma, S., **Nandan, V.**, **Yackel, J.**, et al. (2023). Impact of changing Arctic sea ice extent, sea ice age, and snow depth on sea salt aerosol from blowing snow and the open ocean for 1980-2017. *Journal of Geophysical Research: Atmospheres*, 128, <https://doi.org/10.1029/2022JD037667>
 - **Mahmud, M.S.**, **Nandan, V.**, Singha, S., **Howell, S.E.L.**, **Geldsetzer, T.**, **Yackel, J.**, Montpetit, B. (2022). C- and L-band SAR signatures of Arctic sea ice during freeze-up, *Remote Sensing of Environment*, 279. <https://doi.org/10.1016/j.rse.2022.113129>
 - **Lam, H.M.**, **Geldsetzer, T.**, **Howell, S.E.L.** and **Yackel, J.** (2022). Snow Depth on Sea Ice and on Land in the Canadian Arctic from Long-Term Observations, *Atmosphere-Ocean*. <https://doi.org/10.1080/07055900.2022.2060178>
- 2021 Criscitiello, A. S., **Geldsetzer, T.**, Rhodes, R. H., Arienzo, M., McConnell, J., Chellman, N., Osman, M.B., **Yackel, J.J.**, Marshall, S. (2021). Marine aerosol records of Arctic sea-ice and polynya variability from new Ellesmere and Devon Island firn cores, Nunavut, Canada. *Journal of Geophysical Research: Oceans*, 126. <https://doi.org/10.1029/2021JC017205>
- Tonboe, R., **Nandan, V.**, **Yackel, J.**, Kern, S., Pedersen, L.T., and Stroeve, J. (2021). Simulated Ka- and Ku-band radar altimeter height and freeboard estimation on snow-covered Arctic sea ice. *The Cryosphere*, 15, 1811–1822. <https://doi.org/10.5194/tc-15-1811-2021>
- 2020 **Mahmud, M.**, **Nandan, V.**, **Howell, S.E.L.**, **Geldsetzer, T.**, and **Yackel, J.J.** (2020). Seasonal evolution of L-band SAR backscatter over landfast Arctic sea ice. *Remote Sensing of Environment*, 251, 112049. <https://doi.org/10.1016/j.rse.2020.112049>
- Kern, M., Cullen, R., Berruti, B., Bouffard, J., Casal, T., Drinkwater, M. R., Gabriele, A., Lecuyot, A., Ludwig, M., Midthassel, R., Navas Traver, I., Parrinello, T., Ressler, G., Andersson, E., Martín-Puig, C., Andersen, O., Bartsch, A., Farrell, S., Fleury, S., Gascoin, S., Guillot, A., Humbert, A., Rinne, E., Shepherd, A., van den Broeke, M. R., and **Yackel, J.** (alphabetical) (2020). The Copernicus Polar Ice and Snow Topography Altimeter (CRISTAL) high-priority candidate mission, *The Cryosphere*, 14, 2235–2251. <https://doi.org/10.5194/tc-14-2235-2020>

- [Nandan, V., Scharien, R.K., Geldsetzer, T., Kwok, R., Yackel, J.J., Mahmud, M., Rösel, A. \(2020\) Snow Property Controls on Modeled Ku-Band Altimeter Estimates of First-Year Sea Ice Thickness: Case Studies from the Canadian and Norwegian Arctic, *IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing*, vol. 13, pp. 1082-1096, doi: \[10.1109/JSTARS.2020.2966432\]\(https://doi.org/10.1109/JSTARS.2020.2966432\)](#)

- 2019 Moon, W., [Nandan, V., Scharien, R.K., Wilkinson, J., Yackel, J.J., Barrett, A., Lawrence, I., Segal, R.A., Stroeve, J., Mahmud, M., Duke, P.J., Else, B. \(2019\). Physical length scales of wind-blown snow redistribution and accumulation on relatively smooth Arctic first-year sea ice. *Environmental Research Letters*, 14, 104003. \[10.1088/1748-9326/ab3b8d\]\(https://doi.org/10.1088/1748-9326/ab3b8d\)](#)

- [Howell, S.E.L., Small, D., Rohner, C., Mahmud, M., Yackel, J.J., and Brady, M. \(2019\). Estimating melt onset over Arctic sea ice from time series multi-sensor Sentinel-1 and RADARSAT-2 backscatter. *Remote Sensing of Environment*, 229, 49-59. <https://doi.org/10.1016/j.rse.2019.04.031>](#)

- [Yackel, J.J., Geldsetzer, T., Mahmud, M., Nandan, V., Howell, S.E.L., Scharien, R.K. and Lam, H.M.L. \(2019\). Snow thickness estimation on first-year sea ice from late winter spaceborne scatterometer backscatter variance. *Remote Sensing*, 11, 4, 417. <https://doi.org/10.3390/rs11040417>](#)

- 2018 [Ramjan, S., Geldsetzer, T., Scharien, R., and Yackel, J.J. \(2018\). Predicting Melt Pond Fraction on Landfast Snow Covered First Year Sea Ice from Winter C-Band SAR Backscatter Utilizing Linear, Polarimetric and Texture Parameters. *Remote Sensing*, 10, 10, 1603. <https://doi.org/10.3390/rs10101603>](#)

- [Mahmud, M., Geldsetzer, T., Howell, S.E.L., Yackel, J.J., Nandan, V., and Scharien, R. \(2018\). Incidence angle dependence of HH-Polarized C- and L-band wintertime backscatter over Arctic sea ice. *IEEE Transactions on Geoscience and Remote Sensing*, 56, 11, 6686-6698. <https://ieeexplore.ieee.org/abstract/document/8393469/authors>](#)

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