

Alain Protat : list of publications

Submitted or In Revision (195):

- Ackermann, L., J. Soderholm, **A. Protat**, R. Whitley, L. Ye, and N. Ridder, 2023: Radar and Environment-based Hail Damage Estimates using Machine Learning. *Atmospheric Measurement Techniques*. **submitted 27/07**.
- Brook, J. P., J. S. Soderholm, **A. Protat**, H. McGowan, and R. Warren, 2023: A Radar-Based Hail Climatology of Australia. *Mon. Wea. Rev.*, **submitted, 27/06/2023**.
- Bazantay, C., O. Jourdan, G. Mioche, J. Uitz, J. Delanoë, Q. Cazenave, R. Sauzède, **A. Protat**, and K. Sellegri, 2022: Ocean biogeochemistry and low-level cloud properties over the southern oceans. *Geophys. Res. Letters*, **rejected, May 2023**.
- Fiddes, S. L., M. D. Mallet, A. Protat, M. T. Woodhouse, S. P. Alexander, and K. Furtado, 2023: A machine learning approach for evaluating Southern Ocean cloud-radiative biases over the Southern Ocean in an Earth System Model. *Geosci. Model Dev.*, **submitted 22/03**.
- Hitchcock, S., T. P. Lane, M. Wheeler, and **A. Protat**, 2023: Observations of Newsworthy Gravity Waves from Onboard the RV Investigator 21-22 October, 2019. *Mon. Wea. Rev.*, **submitted 21/01**.
- Knight, C. L., M. D. Mallet, S. P. Alexander, A. D. Fraser, **A. Protat**, and G. McFarquhar, 2023: Cloud properties and boundary layer stability above Southern Ocean sea ice and coastal Antarctica. *J. Geophys. Res. Atmospheres*, **re-submitted, 10/06**.
- Ramadoss, V., K. Pfannkuch, **A. Protat**, Y. Huang, S. Siems, and A. Possner, 2023: An evaluation of kilometer scale ICON simulations of mixed-phase stratocumulus over the Southern Ocean during CAPRICORN. *J. Geophys. Res. Atmos.*, **re-submitted 30/06**.

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- Alexander, S. P., **A. Protat**, A. Berne, and L. Ackermann, 2023: Radar-derived snowfall microphysical properties at Davis, Antarctica. *J. Geophys. Res. Atmospheres*, **accepted, 28/08**.
- Brook, J. P., **A. Protat**, C. K. Potvin, J. S. Soderholm, and H. McGowan, 2023: The effects of spatial interpolation on a novel, dual-Doppler 3D wind retrieval technique. *J Atmos. Oceanic. Technol.*, **accepted, 10/08**.
- Fiddes, S. L., M. D. Mallet, S. P. Alexander, and A. Protat, 2023: Why are clouds in the Southern Ocean super-cool ? *Frontiers for Young Minds*, **accepted, April 2023 (but will take long to be published)**.
- Guyot, A., J. P. Brook, A. Protat, K. Turner, J. Soderholm, N. F. McCarthy, and H. McGowan, 2023: Segmentation of polarimetric radar imagery using statistical texture. *Atmos. Meas. Tech.*, <https://doi.org/10.5194/egusphere-2023-181>. **In press, 23/08**.
- Humphries, R. S., M. D. Keywood, J. P. Ward, J. Harnwell, S. P. Alexander, A. R. Klekociuk, K.

- Hara, I. M. McRobert, **A. Protat**, J. Alroe, L. T. Cravigan, B. Miljevic, Z. D. Ristovski, R. Schofield, S. R. Wilson, C. Flynn, G. R. Kulkarni, G. G. Mace, G. McFarquhar, S. D. Chambers, A. G. Williams, and A. D. Griffiths, 2023: Understanding the seasonal cycle of Southern Ocean aerosols. *Atmos. Chem. Phys.*, **23**, 3749-3777. <https://doi.org/10.5194/acp-23-3749-2023>.
- Louf, V. and **A. Protat**, 2023: S³CAR: Real-time monitoring of weather radar network calibration and antenna pointing. *J. Atmos. Oceanic. Tech.*, submitted, 29/09/2022, **accepted, 15/04**.
- Mace, G. G., A. Protat, S. Benson, and P. McGlynn. 2023: Inferring the Properties of Snow in Southern Ocean Shallow Convection and Frontal Systems using Dual Polarization C-Band Radar. *J. Appl. Meteorol. Clim.*, **62**, 467-487.
- Mallet, M. D., R. S. Humphries, S. L. Fiddes, S. P. Alexander, K. Altieri, H. Angot, T. Bartels-Rausch, J. Creamean, M. Dall'Osto, A. Dommergue, M. Frey, D. Lannuzel, R. Lapere, G. M. McFarquhar, K. Meiners, B. Miljevic, I. Peeken, A. Protat, J. Schmale, K. Sellegri, J. L. Thomas, M. Willis, and H. L. Winton, 2023: Untangling the influence of Antarctic and Southern Ocean life on clouds. *Elem. Sci. Ant.h,11:1*. <https://doi.org/10.1525/elementa.2022.00130>.
- Mallet, M. D., S. P. Alexander, A. Protat, and S. L. Fiddes, 2023: Reducing Southern Ocean shortwave radiation errors in the ERA5 reanalysis with machine learning and 25 years of surface observations. *Artificial Intelligence for the Earth Systems*, **2**, 1-18.
- Potts, R., J. Haggerty, A. Rugg, and **A. Protat**, 2023: Demonstration of a nowcasting service for High Ice Water Content (HIWC) conditions. *Atmosphere*, **14**, 786.
- Protat, A.**, V. Louf, and M. Curtis, 2023: A novel Doppler unfolding technique based on optical flow. *J. Atmos. Oceanic Tech.*, **accepted, 09/08**.
- Raupach, T., J. Soderholm, **A. Protat**, and S. Sherwood, 2023: An improved instability–shear hail proxy for Australia, *Mon. Wea Rev.*, **151**, 545-567.
- Stanford, M. W., A. M. Fridlind, I. Silber, A. S. Ackerman, G. Cesana, J. Mülmenstädt, **A. Protat**, S. Alexander, and A. McDonald, 2023: Observed Process-level Constraints of Cloud and Precipitation Properties over the Southern Ocean for Earth System Model Evaluation. *Atmos. Chem. Phys.*, <https://doi.org/10.5194/egusphere-2023-170>.
- Tansey, E., R. Marchand, S. P. Alexander, A. Klekociuk, and **A. Protat**, 2023: Southern Ocean low cloud and precipitation phase observed during the Macquarie Island Cloud and Radiation Experiment (MICRE). *J. Geophys. Res. Atmospheres*, **accepted, 05/09**.

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- Dimitriadou, K., O. Chanrion, T. Neubert, **A. Protat**, V. Louf, M. Heumesser, L. Husbjerg, C. Kohn,

- N. Ostgaard, and V. Reglero, 2022: Analysis of blue corona discharges at the top of tropical thunderstorm clouds in different phases of convection. *Geophys. Res. Letters*, 49, e2021GL095879. <https://doi.org/10.1029/2021GL095879>.
- Fiddes, S. L., **A. Protat**, M. D. Mallet, S. P. Alexander, and M. T. Woodhouse, 2022: Southern Ocean cloud and shortwave radiation biases in a nudged climate model simulation: does the model ever get it right? *Atmospheric Chemistry and Physics*, **22**, 14603–14630.
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- Hu, Y., G. M. McFarquhar, P. Brechner, W. Wu, Y. Huang, A. Korolev, **A. Protat**, C. Nguyen, M. Wolde, A. Schwarzenboeck, R. M. Rauber, and H. Wang, 2022: Dependence of Ice Crystal Size Distributions in High Ice Water Content Conditions on Environmental Conditions Part II: HAIC-HIWC Cayenne Campaign. *J. Atmos. Sci.*, **79**, 3103-3134.
- Lestari, S., A. King, C. Vincent, **A. Protat**, and D. Karoly, 2022: Variability of Jakarta rain rate characteristics associated with the Madden-Julian Oscillation and Topography. *Mon. Wea. Rev.*, **150**, 1953-1975.
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- Ackermann, L., Y. Huang, S. Siems, M. Manton, F. Lang, T. Chubb, A. Peace, J. Speirs, S. Kenyon, **A. Protat**, and S. P. Alexander, 2021: Wintertime precipitation over the Australian Snowy Mountains: Observations from an Intensive Field Campaign 2018. *Journal of Hydrometeorology*, DOI: 10.1175/JHM-D-20-0283.1.
- Alexander, S., G. McFarquhar, R. Marchand, **A. Protat**, E. Vignon, G. G. Mace, and A. R. Klekociuk, 2021: Mixed-phase clouds and precipitation in Southern Ocean cyclones observed poleward of 64°S by ship-based cloud radar and lidar. *J. Geophys. Res.*, 126, e2020JD033626. <https://doi.org/10.1029/2020JD033626>.
- Bringi, V., M. Grecu, **A. Protat**, M. Thurai, and C. Klepp, 2021: Measurements of Rainfall Rate, Drop Size Distribution, and Variability at Mid- and Higher Latitudes: Application to the Combined DPR-GMI Algorithm. *Remote Sensing*, **13**, 2412. <https://doi.org/10.3390/rs13122412>.
- Brook, J. P., **A. Protat**, J. Soderholm, J. Carlin, H. McGowan, and R. A. Warren, 2021: HailTrack - Improving Radar-Based Hailfall Estimates by Modelling Hail Trajectories. *J. Appl. Meteor. Clim.* **60**, 237-254.
- Curtis, M., G. Dance, V. Louf, and **A. Protat**, 2021: Diagnosis of Tilted Weather Radars Using Solar Interference. *J. Atmos. Oceanic Tech.*, **38**, 1613-1620, <https://doi.org/10.1175/JTECH-D-20-0179.1>.
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- Hu, Y., G. M. McFarquhar, W. Wu, Y. Huang, A. Schwarzenboeck, **A. Protat**, A. Korolev, R. M Rauber, and H. Wang, 2021: Dependence of Ice Microphysical Properties On Environmental Parameters: Results from HAIC/HIWC Cayenne Field Campaign. *J. Atmos. Sci.*, **78**, 2957-2981, <https://doi.org/10.1175/JAS-D-21-0015.1>
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- Mace, G. G., **A. Protat**, and S. Benson, 2021: Mixed-Phase Clouds over the Southern Ocean as observed from satellite and surface based lidar and radar. *J. Geophys. Res. Atmos.*, **126**, e2021JD034569. <https://doi.org/10.1029/2021JD034569>.
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