

# PUBLICATION LIST

Martin Lainer

## Journal articles

- [1] A. Ferrone, J. Kopp, M. Lainer, M. Gabella, U. Germann, and A. Berne. “Double moment normalization of hail size number distributions over Switzerland”. In: *Atmospheric Measurement Techniques Discussions* 2024 (2024), pp. 1–41. DOI: [10.5194/amt-2024-2](https://doi.org/10.5194/amt-2024-2).
- [2] M. Lainer, K. P. Brennan, A. Hering, J. Kopp, S. Monhart, D. Wolfensberger, and U. Germann. “Drone-based photogrammetry combined with deep learning to estimate hail size distributions and melting of hail on the ground”. In: *Atmospheric Measurement Techniques* 17.8 (2024), pp. 2539–2557. DOI: [10.5194/amt-17-2539-2024](https://doi.org/10.5194/amt-17-2539-2024).
- [3] M. Gabella, M. Lainer, D. Wolfensberger, and J. Grazioli. “On the polarimetric backscatter by a still or quasi-still wind turbine”. In: *Atmospheric Measurement Techniques* 16.19 (2023), pp. 4409–4422. DOI: [10.5194/amt-16-4409-2023](https://doi.org/10.5194/amt-16-4409-2023).
- [4] J. Figueras i Ventura, Z. Schauwecker, M. Lainer, and J. Grazioli. “On the Effect of Radome Characteristics on Polarimetric Moments and Sun Measurements of a Weather Radar”. In: *IEEE Geoscience and Remote Sensing Letters* 18.4 (2021), pp. 642–646. DOI: [10.1109/LGRS.2020.2981993](https://doi.org/10.1109/LGRS.2020.2981993).
- [5] M. Lainer, J. Figueras i Ventura, Z. Schauwecker, M. Gabella, M. F. Bolaños, R. Pauli, and J. Grazioli. “Insights into wind turbine reflectivity and radar cross-section (RCS) and their variability using X-band weather radar observations”. In: *Atmospheric Measurement Techniques* 14.5 (2021), pp. 3541–3560. DOI: [10.5194/amt-14-3541-2021](https://doi.org/10.5194/amt-14-3541-2021).
- [6] J. Figueras i Ventura, M. Lainer, Z. Schauwecker, J. Grazioli, and U. Germann. “Pyrad: A Real-Time Weather Radar Data Processing Framework Based on Py-ART”. In: *Journal of Open Research Software* (2020). DOI: [10.5334/jors.330](https://doi.org/10.5334/jors.330).
- [7] M. Lainer, K. Hocke, E. Eckert, and N. Kämpfer. “Significant decline of mesospheric water vapor at the NDACC site near Bern in the period 2007 to 2018”. In: *Atmospheric Chemistry and Physics* 19.9 (2019), pp. 6611–6620. DOI: [10.5194/acp-19-6611-2019](https://doi.org/10.5194/acp-19-6611-2019).
- [8] K. Hocke, M. Lainer, L. Bernet, and N. Kämpfer. “Mesospheric Inversion Layers at Mid-Latitudes and Coincident Changes of Ozone, Water Vapour and Horizontal Wind in the Middle Atmosphere”. In: *Atmosphere* 9.5 (2018). ISSN: 2073-4433. DOI: [10.3390/atmos9050171](https://doi.org/10.3390/atmos9050171). URL: <https://www.mdpi.com/2073-4433/9/5/171>.
- [9] M. Lainer, K. Hocke, and N. Kämpfer. “Long-term observation of midlatitude quasi 2-day waves by a water vapor radiometer”. In: *Atmospheric Chemistry and Physics* 18.16 (2018), pp. 12061–12074. DOI: [10.5194/acp-18-12061-2018](https://doi.org/10.5194/acp-18-12061-2018).

- [10] M. Lainer, K. Hocke, R. Rüfenacht, and N. Kämpfer. “Quasi 18 h wave activity in ground-based observed mesospheric H<sub>2</sub>O over Bern, Switzerland”. In: *Atmospheric Chemistry and Physics* 17.24 (2017), pp. 14905–14917. DOI: [10.5194/acp-17-14905-2017](https://doi.org/10.5194/acp-17-14905-2017).
- [11] G. E. Nedoluha, M. Kiefer, S. Lossow, R. M. Gomez, N. Kämpfer, M. Lainer, P. Forkman, O. M. Christensen, J. J. Oh, P. Hartogh, J. Anderson, K. Bramstedt, B. M. Dinelli, M. Garcia-Comas, M. Hervig, D. Murtagh, P. Raspollini, W. G. Read, K. Rosenlof, G. P. Stiller, and K. A. Walker. “The SPARC water vapor assessment II: intercomparison of satellite and ground-based microwave measurements”. In: *Atmospheric Chemistry and Physics* 17.23 (2017), pp. 14543–14558. DOI: [10.5194/acp-17-14543-2017](https://doi.org/10.5194/acp-17-14543-2017).
- [12] S. Unterstrasser, K. Gierens, I. Sölch, and M. Lainer. “Numerical simulations of homogeneously nucleated natural cirrus and contrail-cirrus. Part 1: How different are they?” In: *Meteorologische Zeitschrift* 26.6 (Dec. 2017), pp. 621–642. DOI: [10.1127/metz/2016/0777](https://doi.org/10.1127/metz/2016/0777).
- [13] K. Hocke, M. Lainer, L. Moreira, J. Hagen, S. Fernandez Vidal, and F. Schranz. “Atmospheric inertia-gravity waves retrieved from level-2 data of the satellite microwave limb sounder Aura/MLS”. In: *Annales Geophysicae* 34.9 (2016), pp. 781–788. DOI: [10.5194/angeo-34-781-2016](https://doi.org/10.5194/angeo-34-781-2016).
- [14] M. Lainer, K. Hocke, and N. Kämpfer. “Variability of mesospheric water vapor above Bern in relation to the 27-day solar rotation cycle”. In: *Journal of Atmospheric and Solar-Terrestrial Physics* 143-144 (2016), pp. 71–87. ISSN: 1364-6826. DOI: [10.1016/j.jastp.2016.03.008](https://doi.org/10.1016/j.jastp.2016.03.008).
- [15] K. Hocke, M. Lainer, and A. Schanz. “Composite analysis of a major sudden stratospheric warming”. In: *Annales Geophysicae* 33.6 (2015), pp. 783–788. DOI: [10.5194/angeo-33-783-2015](https://doi.org/10.5194/angeo-33-783-2015).
- [16] M. Lainer, N. Kämpfer, B. Tschanz, G. E. Nedoluha, S. Ka, and J. J. Oh. “Trajectory mapping of middle atmospheric water vapor by a mini network of NDACC instruments”. In: *Atmospheric Chemistry and Physics* 15.16 (2015), pp. 9711–9730. DOI: [10.5194/acp-15-9711-2015](https://doi.org/10.5194/acp-15-9711-2015).

## Conference proceedings

- [17] M. Lainer, K. P. Brennan, A. Hering, J. Kopp, S. Monhart, J. Portmann, D. Wolfensberger, and U. Germann. “Drone-based photogrammetry combined with deep-learning to estimate hail size distributions and melting of hail on the ground”. In: *4th European Hail Workshop Conference Program*. 2024.
- [18] M. Lainer, K. Brennan, J. Kopp, S. Monhart, D. Wolfensberger, A. Hering, and Z. Schauwecker. “Drone-based hail observations and the retrieval of the hail size distribution after a supercell passage in summer 2021 in Switzerland”. In: *11th European Conference on Severe Storms*. Vol. ECSS2023-5. Bucharest, Romania, 8–12 May 2023, 2023. DOI: [10.5194/ecss2023-5](https://doi.org/10.5194/ecss2023-5).
- [19] J. F. I. Ventura, M. Lainer, Z. Schauwecker, G. Marco, R. Pauli, and J. Grazioli. “Analysis of X-band Doppler polarimetric weather radar returns from a wind farm”. In: *Specialist Meeting on Electromagnetic Waves and Wind Turbines (EMWT2019)*. 2019.

- [20] M. Lainer, K. Hocke, F. Schranz, and N. Kämpfer. “Variability of middle atmospheric water vapor: From diurnal to decadal patterns”. In: *EGU General Assembly Conference Abstracts*. EGU2018-15987. 2018.
- [21] F. Navas-Guzmán, L. Moreira, M. Lainer, F. Schranz, K. Hocke, and N. Kämpfer. “Stratospheric evolution of temperature and different atmospheric trace gases during winters at the NDACC Alpine mid-latitude station at Bern”. In: *EGU General Assembly Conference Abstracts*. EGU2017-3531. 2017.
- [22] M. Lainer, K. Hocke, and N. Kämpfer. “Variability of mesospheric water vapor above Bern in relation to the 27-day solar rotation cycle”. In: *EGU General Assembly Conference Abstracts*. EGU2016-3826. 2016.
- [23] M. Lainer and S. Unterstrasser. “Numerical simulations of persisting contrails with Lagrangian microphysics”. In: *Proceedings of the 3rd International Conference on Transport, Atmosphere and Climate (TAC-3)*. 2012.

## PhD and Master thesis

- [24] M. Lainer. “Investigating the Variability and Dynamics of Middle Atmospheric Water Vapor by Ground-based Microwave Radiometry”. PhD thesis. University of Bern, 2017.
- [25] M. Lainer. “Numerische Simulationen von langlebigen Kondensstreifen mit Lagrange’scher Mikrophysik”. Master thesis. Ludwig-Maximilian University Munich, 2012.