

## Bibliography

- Atlas D., Srivastava R.C., Sekhon R.S. Doppler radar characteristics of precipitation at vertical incidence. *Rev. Geophys.* 1973, 11 (1) pp. 1–35
- Beard K.V., Chuang C. A new model for the equilibrium shape of raindrops. *J. Atmos. Sci.* 1987, 44 (11) pp. 1509–1524
- Bernauer F. et al. On the consistency of 2-D video disdrometers in measuring microphysical parameters of solid precipitation. *Atmos. Meas. Tech.* 2015, 8 (8) p. 3251
- Blanchard D.C. Raindrop size-distribution in Hawaiian rains. *J. Meteorol.* 1953, 10 (6) pp. 457–473
- Brandes E.A., Ikeda K., Zhang G., Schönhuber M., Rasmussen R.M. A statistical and physical description of hydrometeor distributions in Colorado snowstorms using a video disdrometer. *J. Appl. Meteorol. Climatol.* 2007, 46 (5) pp. 634–650
- Bringi V.N., Chandrasekar V., Xiao R. Raindrop axis ratios and size distributions in Florida rainshafts: An assessment of multiparameter radar algorithms. *IEEE Trans. Geosci. Remote Sens.* 1998, 36 (3) pp. 703–715
- Caracciolo, C., Prodi, F. & Uijlenhoet, R.: *Comparison between Pludix and impact/optical disdrometers during rainfall measurement campaigns. Atmospheric research* 82.1-2, 137-163, 2006.
- Caracciolo C., Porcu F., Prodi F. Precipitation classification at mid-latitudes in terms of drop size distribution parameters. *Adv. Geosci.* 2008, 16 pp. 11–17
- Caton P.G.F. A study of raindrop-size distributions in the free atmosphere. *Q. J. R. Meteorol. Soc.* 1966, 92 (391) pp. 15–30
- Cauteruccio A. The role of turbulence in particle-fluid interaction as induced by the outer geometry of catching-type precipitation gauges. PhD Thesis, 2020, [https://doi.org/10.15167/cauteruccio-arianna\\_phd2020-04-06](https://doi.org/10.15167/cauteruccio-arianna_phd2020-04-06).
- Cauteruccio A., Colli M., Stagnaro M., Lanza L.G., Vuerich E. In situ precipitation measurements, p. 359 – 400. In: Foken T. (ed.), *Springer Handbook of Atmospheric Measurements*. Springer Nature, Switzerland, ISBN 978-3-030-52170-7, e-ISBN 978-3-030-52171-4, pp. 1740, 2021.
- Chandrasekar V., Cooper W.A., Bringi V.N. Axis ratios and oscillations of raindrops. *J. Atmos. Sci.* 1988, 45 (8) pp. 1323–1333
- Colli M., Lanza L.G., La Barbera P., Chan P.W. Measurement accuracy of weighing and tipping-bucket rainfall intensity gauges under dynamic laboratory testing. *Atmos. Res.* 2014, 144 pp. 186–194
- de Moraes Frasson R.P., Kindl da Cunha L., Krajewski W.F. Assessment of the Thies optical disdrometer performance. *Atmos. Res.* 2011, 101 (1-2) pp. 237–255
- Förster J., Gust G., Siegfried S. A piezoelectrical Rain Gauge for Application on Buoys. *J. Atmos. Ocean. Technol.* 2004, 21 pp. 179–193

- Green A.W. An approximation for the shapes of large raindrops. *J. Appl. Meteorol.* 1975, 14 (8) pp. 1578–1583
- Grossklaus M., Uhlig K., Hasse L. An optical disdrometer for use in high wind speeds. *J. Atmos. Ocean. Technol.* 1998, 15 (4) pp. 1051–1059
- Houze R.A. Jr., Hobbs P.V., Herzegh P.H., Parsons D.B. Size distributions of precipitation particles in frontal clouds. *J. Atmos. Sci.* 1979, 36 (1) pp. 156–162
- Jevons W.S. LIV. On the deficiency of rain in an elevated rain-gauge, as caused by wind. *Lond. Edinb. Dublin Philos. Mag. J. Sci.* 1861, 22 (149) pp. 421–433
- Kathiravelu G., Lucke T., Nichols P. Rain drop measurement techniques: a review. *Water.* 2016, 8 (1) p. 29
- Kinnel P.I.A. The Acoustic Measurement of Water-Drop Impacts, *Journal of applied meteorology*, Vol. 11, 1972.
- Klugmann D., Richter C. Correction of drop shape-induced errors on rain rates derived from radar-measured Doppler spectra at vertical incidence. *J. Atmos. Ocean. Technol.* 1995, 12 (3) pp. 657–661
- Kourtellis A.G. et al. Disdrometer calibration using an adaptive signal processing algorithm. Proceedings of OCEANS 2005 MTS/IEEE. IEEE, 2005.
- Kruger A., Krajewski W.F. Two-dimensional video disdrometer: A description. *J. Atmos. Ocean. Technol.* 2002, 19 (5) pp. 602–617
- Khvorostyanov V.I., Curry J.A. Fall velocities of hydrometeors in the atmosphere: Refinements to a continuous analytical power law. *J. Atmos. Sci.* 2005, 62 (12) pp. 4343–4357
- Lanza L.G., Stagi L. Certified accuracy of rainfall data as a standard requirement in scientific investigations. *Adv. Geosci.* 2008, 16 pp. 43–48
- Lanzinger E., Manfred T., Herbert W. Rainfall amount and intensity measured by the Thies laser precipitation monitor. TECO-2006, Geneva, Switzerland, 2006.
- Licznar P. et al. Microprocessor field impactometer calibration: Do we measure drops' momentum or their kinetic energy? *J. Atmos. Ocean. Technol.* 2008, 25 (5) pp. 742–753
- Locatelli J.D., Hobbs P.V. Fall speeds and masses of solid precipitation particles. *J. Geophys. Res.* 1974, 79 (15) pp. 2185–2197
- Löffler-Mang M., Schön D., Landry M. Characteristics of a new automatic hail recorder. *Atmos. Res.* 2011, 100 (4) pp. 439–446
- Marshall J.S., Palmer W.M.K. The distribution of raindrops with size. *J. Meteorol.* 1948, 5 (4) pp. 165–166
- Marzano F.S., Cimini D., Montopoli M. Investigating precipitation microphysics using ground-based microwave remote sensors and disdrometer data. *Atmos. Res.* 2010, 97 (4) pp. 583–600
- Merlone A., Lopardo G., Sanna F., Bell S., Benyon R., Bergerud R.A. et al. The MeteoMet project – metrology for meteorology: challenges and results. *Meteorol. Appl.* 2015, 22 pp. 820–829

- Merlone A., Coppa G., Musacchio C., Lanza L.G., Cauteruccio A., Stagnaro M. et al. The INCIPIT project: calibration and accuracy of non-catching instruments to measure liquid/solid atmospheric precipitation. In: WMO/CIMO Technical Conference on Meteorological and Environmental Instruments and Methods of Observation (CIMO TECO-2020). Paris, France, 21–24 September 2020.
- Mueller E. Radar rainfall studies (Doctoral dissertation, Ph. D. dissertation, University of Illinois), 1965.
- Nitu R., Roulet Y.-A., Wolff M. et al. WMO solid precipitation intercomparison experiment (SPICE) (2012–2015). World Meteorological Organisation, Instruments and Observing Methods (IOM) Report No. 131, pp. 1445, 2018.
- Passarelli R.E. Jr. Theoretical and observational study of snow-size spectra and snowflake aggregation efficiencies. *J. Atmos. Sci.* 1978, 35 (5) pp. 882–889
- Penide G., Kumar V., Protat A., May P. Statistics of Drop Size Distribution Parameters and Rain Rates for Stratiform and Convective Precipitation during the North Australian Wet Season. *Mon. Weather Rev.* 2013, 141 pp. 3222–3237
- Prodi, F., Tagliavini, A., & Medini, R.: *Time variability in rainfall events observed by Pludix. Physics and Chemistry of the Earth, Part B: Hydrology, Oceans and Atmosphere* 25.10-12 (2000): 959-963.
- Pruppacher H.R., Beard K.V. A wind tunnel investigation of the internal circulation and shape of water drops falling at terminal velocity in air. *Q. J. R. Meteorol. Soc.* 1970, 96 (408) pp. 247–256
- Pruppacher H.R., Pitter R.L. A semi-empirical determination of the shape of cloud and rain drops. *J. Atmos. Sci.* 1971, 28 (1) pp. 86–94
- Rasmussen R.M., Vivekanandan J., Cole J., Myers B., Masters C. The estimation of snowfall rate using visibility. *J. Appl. Meteorol.* 1999, 38 (10) pp. 1542–1563
- Rulfová Z., Kyselý J. Disaggregating convective and stratiform precipitation from station weather data. *Atmos. Res.* 2013, 134 pp. 100–115
- Salmi A., Ikonen J., Oyj V. Piezoelectric precipitation sensor from Vaisala. In WMO Technical Conference on Instruments and Methods of Observation (TECO-2005), Bucharest, Romania (pp. 4-7), May 2005.
- Salmi A., Elomaa L., Kopsala P., Laukkanen E. Piezoelectric Vaisala raincap® rain sensor applied to drop size distribution monitoring. In Technical Conference on Meteorological and Environmental Instruments and Methods of Observation. Geneva: World Meteorological Organization, pp. 1-7, 2011.
- Santana M.A.A. Guimarães, P.L.O., Lanza, L.G. & Vuerich, E.: Metrological analysis of a gravimetric calibration system for tipping-bucket rain gauges. *Meteorol. Appl.* 2015, 22 pp. 879–885
- Sekhon R.S., Srivastava R.C. Snow size spectra and radar reflectivity. *J. Atmos. Sci.* 1970, 27 (2) pp. 299–307
- Sheppard B.E. Effect of Rain on Ground-Based Microwave Radiometric Measurements in the 20 - 90-GHz Range. *J. Atmos. Ocean. Technol.* 1996, 13 (6) pp. 1139–1151

- Smith C.D., Ross A., John Kochendorfer J., Earle M.E., Wolff M., Buisán S. et al. Evaluation of the WMO solid precipitation intercomparison experiment (SPICE) transfer functions for adjusting the wind bias in solid precipitation measurements. *Hydrol. Earth Syst. Sci.* 2020, 24 pp. 4025–4043
- Szakall M., Diehl K., Mitra S.K., Borrmann S. A wind tunnel study on the shape, oscillation, and internal circulation of large raindrops with sizes between 2.5 and 7.5 mm. *J. Atmos. Sci.* 2009, 66 (3) pp. 755–765
- Testik F.Y., Rahman M.K. High-speed optical disdrometer for rainfall microphysical observations. *J. Atmos. Ocean. Technol.* 2016, 33 (2) pp. 231–243
- Tuukka P. Calibration of non-catching precipitation sensors (Vaisala). MeteoMet2 workshop, Genova University, March 11th-12th 2015.
- Ulbrich C.W. Natural variations in the analytical form of the raindrop size distribution. *J. Clim. Appl. Meteorol.* 1983, 22 (10) pp. 1764–1775
- Vuerich E., Monesi C., Lanza L.G., Stagi L., Lanzinger E. WMO field intercomparison of rainfall intensity gauges. World Meteorological Organisation – Instruments and Observing Methods Rep. No. 99, WMO/TD No. 1504, pp. 286, 2009.
- Waldvogel A. The N0 jump of raindrop spectra. *J. Atmos. Sci.* 1974, 31 (4) pp. 1067–1078
- WMO – World Meteorological Organization. 2014 (updated 2017): Guide to Meteorological Instruments and Methods of Observation. WMO-N. 8, ISBN 978-92-63-10008-5.
- Yuter S.E., Kingsmill D.E., Nance L.B., Löffler-Mang M. Observations of precipitation size and fall speed characteristics within coexisting rain and wet snow. *J. Appl. Meteorol. Climatol.* 2006, 45 (10) pp. 1450–1464