# Markus D Petters

List of Publications by Year
in descending order



| | | | |
|---|---|---|---|
| 105 papers | 11,554 citations | 36203 51 h-index | 33814 99 g-index |
| 155 all docs | 155 docs citations | 155 times ranked | 6493 citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | A single parameter representation of hygroscopic growth and cloud condensation nucleus activity. Atmospheric Chemistry and Physics, 2007, 7, 1961-1971. | 1.9 | 2,020 |
| 2 | Predicting global atmospheric ice nuclei distributions and their impacts on climate. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 11217-11222. | 3.3 | 945 |
| 3 | Rainforest Aerosols as Biogenic Nuclei of Clouds and Precipitation in the Amazon. Science, 2010, 329, 1513-1516. | 6.0 | 541 |
| 4 | Integrating laboratory and field data to quantify the immersion freezing ice nucleation activity of mineral dust particles. Atmospheric Chemistry and Physics, 2015, 15, 393-409. | 1.9 | 315 |
| 5 | A review of the anthropogenic influence on biogenic secondary organic aerosol. Atmospheric Chemistry and Physics, 2011, 11, 321-343. | 1.9 | 297 |
| 6 | Relative roles of biogenic emissions and Saharan dust as ice nuclei in the Amazon basin. Nature Geoscience, 2009, 2, 402-405. | 5.4 | 282 |
| 7 | Effect of chemical mixing state on the hygroscopicity and cloud nucleation properties of calcium mineral dust particles. Atmospheric Chemistry and Physics, 2009, 9, 3303-3316. | 1.9 | 268 |
| 8 | The viscosity of atmospherically relevant organic particles. Nature Communications, 2018, 9, 956. | 5.8 | 252 |
| 9 | Cloud condensation nucleation activity of biomass burning aerosol. Journal of Geophysical Research, 2009, 114, . | 3.3 | 213 |
| 10 | Dynamics and Chemistry of Marine Stratocumulusâ€"DYCOMS-II. Bulletin of the American Meteorological Society, 2003, 84, 579-594. | 1.7 | 209 |
| 11 | Large-Eddy Simulations of a Drizzling, Stratocumulus-Topped Marine Boundary Layer. Monthly Weather Review, 2009, 137, 1083-1110. | 0.5 | 208 |
| 12 | A comprehensive laboratory study on the immersion freezing behavior of illite NX particles: a comparison of 17 ice nucleation measurement techniques. Atmospheric Chemistry and Physics, 2015, 15, 2489-2518. | 1.9 | 200 |
| 13 | Resurgence in Ice Nuclei Measurement Research. Bulletin of the American Meteorological Society, 2011, 92, 1623-1635. | 1.7 | 199 |
| 14 | Supplement to Dynamics and Chemistry of Marine Stratocumulusâ€"DYCOMS-II. Bulletin of the American Meteorological Society, 2003, 84, 593-593. | 1.7 | 199 |
| 15 | Cloud droplet activation of secondary organic aerosol. Journal of Geophysical Research, 2007, 112, . | 3.3 | 196 |
| 16 | A single parameter representation of hygroscopic growth and cloud condensation nucleus activity â€" Part 2: Including solubility. Atmospheric Chemistry and Physics, 2008, 8, 6273-6279. | 1.9 | 194 |
| 17 | Towards closing the gap between hygroscopic growth and activation for secondary organic aerosol: Part 1 â€" Evidence from measurements. Atmospheric Chemistry and Physics, 2009, 9, 3987-3997. | 1.9 | 191 |
| 18 | Irreversible loss of ice nucleation active sites in mineral dust particles caused by sulphuric acid condensation. Atmospheric Chemistry and Physics, 2010, 10, 11471-11487. | 1.9 | 175 |

| # | Article | IF | Citations |
|---|---|---|---|
| 19 | An overview of the Amazonian Aerosol Characterization Experiment 2008 (AMAZE-08). Atmospheric Chemistry and Physics, 2010, 10, 11415-11438. | 1.9 | 170 |
| 20 | Cloud condensation nuclei and ice nucleation activity of hydrophobic and hydrophilic soot particles. Physical Chemistry Chemical Physics, 2009, 11, 7906. | 1.3 | 165 |
| 21 | Hygroscopicity and cloud droplet activation of mineral dust aerosol. Geophysical Research Letters, 2009, 36, . | 1.5 | 159 |
| 22 | Evaluation of the aerosol indirect effect in marine stratocumulus clouds: Droplet number, size, liquid water path, and radiative impact. Journal of Geophysical Research, 2005, 110, . | 3.3 | 144 |
| 23 | Chemical aging and the hydrophobic-to-hydrophilic conversion of carbonaceous aerosol. Geophysical Research Letters, 2006, 33, . | 1.5 | 137 |
| 24 | Towards closing the gap between hygroscopic growth and activation for secondary organic aerosol â€“ Part 2: Theoretical approaches. Atmospheric Chemistry and Physics, 2009, 9, 3999-4009. | 1.9 | 130 |
| 25 | Ice nuclei emissions from biomass burning. Journal of Geophysical Research, 2009, 114, . | 3.3 | 125 |
| 26 | Revisiting ice nucleation from precipitation samples. Geophysical Research Letters, 2015, 42, 8758-8766. | 1.5 | 123 |
| 27 | A single parameter representation of hygroscopic growth and cloud condensation nucleus activity â€“ Part 3: Including surfactant partitioning. Atmospheric Chemistry and Physics, 2013, 13, 1081-1091. | 1.9 | 110 |
| 28 | Water uptake and chemical composition of fresh aerosols generated in open burning of biomass. Atmospheric Chemistry and Physics, 2010, 10, 5165-5178. | 1.9 | 104 |
| 29 | Influences on the fraction of hydrophobic and hydrophilic black carbon in the atmosphere. Atmospheric Chemistry and Physics, 2011, 11, 5099-5112. | 1.9 | 101 |
| 30 | Influence of Functional Groups on Organic Aerosol Cloud Condensation Nucleus Activity. Environmental Science & Technology, 2014, 48, 10182-10190. | 4.6 | 99 |
| 31 | Laboratory investigations of the impact of mineral dust aerosol on cold cloud formation. Atmospheric Chemistry and Physics, 2010, 10, 11955-11968. | 1.9 | 98 |
| 32 | Single-parameter estimates of aerosol water content. Environmental Research Letters, 2008, 3, 035002. | 2.2 | 97 |
| 33 | Ice Initiation by Aerosol Particles: Measured and Predicted Ice Nuclei Concentrations versus Measured Ice Crystal Concentrations in an Orographic Wave Cloud. Journals of the Atmospheric Sciences, 2010, 67, 2417-2436. | 0.6 | 96 |
| 34 | Accumulation mode aerosol, pockets of open cells, and particle nucleation in the remote subtropical Pacific marine boundary layer. Journal of Geophysical Research, 2006, 111, . | 3.3 | 88 |
| 35 | Influence of Functional Groups on the Viscosity of Organic Aerosol. Environmental Science & Technology, 2017, 51, 271-279. | 4.6 | 87 |
| 36 | The role of time in heterogeneous freezing nucleation. Journal of Geophysical Research D: Atmospheres, 2013, 118, 3731-3743. | 1.2 | 85 |

| # | Article | IF | Citations |
|---|---|---|---|
| 37 | Water interaction with hydrophobic and hydrophilic soot particles. Physical Chemistry Chemical Physics, 2008, 10, 2332. | 1.3 | 83 |
| 38 | Timescale for hygroscopic conversion of calcite mineral particles through heterogeneous reaction with nitric acid. Physical Chemistry Chemical Physics, 2009, 11, 7826. | 1.3 | 82 |
| 39 | The Fifth International Workshop on Ice Nucleation phase 2 (FIN-02): laboratory intercomparison of ice nucleation measurements. Atmospheric Measurement Techniques, 2018, 11, 6231-6257. | 1.2 | 82 |
| 40 | High Relative Humidity as a Trigger for Widespread Release of Ice Nuclei. Aerosol Science and Technology, 2014, 48, i-v. | 1.5 | 80 |
| 41 | Contribution of pollen to atmospheric ice nuclei concentrations. Atmospheric Chemistry and Physics, 2014, 14, 5433-5449. | 1.9 | 79 |
| 42 | Surfactant effect on cloud condensation nuclei for twoâ€component internally mixed aerosols. Journal of Geophysical Research D: Atmospheres, 2016, 121, 1878-1895. | 1.2 | 79 |
| 43 | Trends in particle-phase liquid water during the Southern Oxidant and Aerosol Study. Atmospheric Chemistry and Physics, 2014, 14, 10911-10930. | 1.9 | 75 |
| 44 | On Measuring the Critical Diameter of Cloud Condensation Nuclei Using Mobility Selected Aerosol. Aerosol Science and Technology, 2007, 41, 907-913. | 1.5 | 74 |
| 45 | Comparative measurements of ambient atmospheric concentrations of ice nucleating particles using multiple immersion freezing methods and a continuous flow diffusion chamber. Atmospheric Chemistry and Physics, 2017, 17, 11227-11245. | 1.9 | 73 |
| 46 | Experimental study of the role of physicochemical surface processing on the IN ability of mineral dust particles. Atmospheric Chemistry and Physics, 2011, 11, 11131-11144. | 1.9 | 70 |
| 47 | Aerosol hygroscopicity and cloud droplet activation of extracts of filters from biomass burning experiments. Journal of Geophysical Research, 2008, 113, . | 3.3 | 69 |
| 48 | Role of molecular size in cloud droplet activation. Geophysical Research Letters, 2009, 36, . | 1.5 | 69 |
| 49 | Potential impact of Owens (dry) Lake dust on warm and cold cloud formation. Journal of Geophysical Research, 2007, 112, . | 3.3 | 68 |
| 50 | Ice nucleation behavior of biomass combustion particles at cirrus temperatures. Journal of Geophysical Research, 2009, 114, . | 3.3 | 68 |
| 51 | An annual cycle of sizeâ€resolved aerosol hygroscopicity at a forested site in Colorado. Journal of Geophysical Research, 2012, 117, . | 3.3 | 65 |
| 52 | Surface modification of mineral dust particles by sulphuric acid processing: implications for ice nucleation abilities. Atmospheric Chemistry and Physics, 2011, 11, 7839-7858. | 1.9 | 60 |
| 53 | Towards closing the gap between hygroscopic growth and CCN activation for secondary organic aerosols â€" Part 3: Influence of the chemical composition on the hygroscopic properties and volatile fractions of aerosols. Atmospheric Chemistry and Physics, 2010, 10, 3775-3785. | 1.9 | 58 |
| 54 | Temperatureâ€and Humidityâ€Dependent Phase States of Secondary Organic Aerosols. Geophysical Research Letters, 2019, 46, 1005-1013. | 1.5 | 53 |

| # | Article | IF | Citations |
| --- | --- | --- | --- |
| 55 | Cloud droplet activation of polymerized organic aerosol. Tellus, Series B: Chemical and Physical Meteorology, 2006, 58, 196-205. | 0.8 | 49 |
| 56 | A comprehensive characterization of ice nucleation by three different types of cellulose particles immersed in water. Atmospheric Chemistry and Physics, 2019, 19, 4823-4849. | 1.9 | 48 |
| 57 | Impact of Particle Generation Method on the Apparent Hygroscopicity of Insoluble Mineral Particles. Aerosol Science and Technology, 2010, 44, 830-846. | 1.5 | 44 |
| 58 | Hygroscopicity frequency distributions of secondary organic aerosols. Journal of Geophysical Research, 2012, 117, . | 3.3 | 44 |
| 59 | Supersaturation in the Wyoming CCN Instrument. Journal of Atmospheric and Oceanic Technology, 2006, 23, 1323-1339. | 0.5 | 43 |
| 60 | Heterogeneous ice nucleation measurements of secondary organic aerosol generated from ozonolysis of alkenes. Geophysical Research Letters, 2009, 36, . | 1.5 | 43 |
| 61 | Accurate Determination of Aerosol Activity Coefficients at Relative Humidities up to 99% Using the Hygroscopicity Tandem Differential Mobility Analyzer Technique. Aerosol Science and Technology, 2013, 47, 991-1000. | 1.5 | 43 |
| 62 | Minimal cooling rate dependence of ice nuclei activity in the immersion mode. Journal of Geophysical Research D: Atmospheres, 2013, 118, 10,535. | 1.2 | 43 |
| 63 | Prediction of cloud condensation nuclei activity for organic compounds using functional group contribution methods. Geoscientific Model Development, 2016, 9, 111-124. | 1.3 | 40 |
| 64 | In Situ, Airborne Instrumentation: Addressing and Solving Measurement Problems in Ice Clouds. Bulletin of the American Meteorological Society, 2012, 93, ES29-ES34. | 1.7 | 38 |
| 65 | Characterization of the temperature and humidity-dependent phase diagram of amorphous nanoscale organic aerosols. Physical Chemistry Chemical Physics, 2017, 19, 6532-6545. | 1.3 | 37 |
| 66 | Amorphous phase state diagrams and viscosity of ternary aqueous organic/organic and inorganic/organic mixtures. Physical Chemistry Chemical Physics, 2018, 20, 15086-15097. | 1.3 | 37 |
| 67 | Optical particle counter measurement of marine aerosol hygroscopic growth. Atmospheric Chemistry and Physics, 2008, 8, 1949-1962. | 1.9 | 36 |
| 68 | The Role of Temperature in Cloud Droplet Activation. Journal of Physical Chemistry A, 2012, 116, 9706-9717. | 1.1 | 36 |
| 69 | 100 Years of Progress in Cloud Physics, Aerosols, and Aerosol Chemistry Research. Meteorological Monographs, 2019, 59, 11.1-11.72. | 5.0 | 35 |
| 70 | Cloud droplet activation of secondary organic aerosol is mainly controlled by molecular weight, not water solubility. Atmospheric Chemistry and Physics, 2019, 19, 941-954. | 1.9 | 35 |
| 71 | Intercomparison of cloud condensation nuclei and hygroscopic fraction measurements: Coated soot particles investigated during the LACIS Experiment in November (LExNo). Journal of Geophysical Research, 2010, 115, . | 3.3 | 34 |
| 72 | Coalescence-based assessment of aerosol phase state using dimers prepared through a dual-differential mobility analyzer technique. Aerosol Science and Technology, 2016, 50, 1294-1305. | 1.5 | 32 |

| # | Article | IF | Citations |
|---|---|---|---|
| 73 | Thermodynamic and kinetic behavior of glycerol aerosol. Aerosol Science and Technology, 2016, 50, 1385-1396. | 1.5 | 30 |
| 74 | Deliquescence-controlled activation of organic aerosols. Geophysical Research Letters, 2006, 33, . | 1.5 | 29 |
| 75 | Volatility and Viscosity Are Correlated in Terpene Secondary Organic Aerosol Formed in a Flow Reactor. Environmental Science and Technology Letters, 2019, 6, 513-519. | 3.9 | 28 |
| 76 | Cloud Particle Precursors. , 2009, , 291-318. | | 24 |
| 77 | A language to simplify computation of differential mobility analyzer response functions. Aerosol Science and Technology, 2018, 52, 1437-1451. | 1.5 | 22 |
| 78 | The effect of hydrophobic glassy organic material on the cloud condensation nuclei activity of particles with different morphologies. Atmospheric Chemistry and Physics, 2019, 19, 3325-3339. | 1.9 | 22 |
| 79 | Hygroscopicity of Organic Compounds as a Function of Carbon Chain Length and Carboxyl, Hydroperoxy, and Carbonyl Functional Groups. Journal of Physical Chemistry A, 2017, 121, 5164-5174. | 1.1 | 21 |
| 80 | Characterization of Iceâ€Nucleating Particles Over Northern India. Journal of Geophysical Research D: Atmospheres, 2019, 124, 10467-10482. | 1.2 | 21 |
| 81 | Predicting the influence of particle size on the glass transition temperature and viscosity of secondary organic material. Scientific Reports, 2020, 10, 15170. | 1.6 | 21 |
| 82 | Transport of pollution to a remote coastal site during gap flow from California's interior: impacts on aerosol composition, clouds, and radiative balance. Atmospheric Chemistry and Physics, 2017, 17, 1491-1509. | 1.9 | 20 |
| 83 | Hygroscopic growth and cloud droplet activation of xanthan gum as a proxy for marine hydrogels. Journal of Geophysical Research D: Atmospheres, 2016, 121, 11,803. | 1.2 | 18 |
| 84 | Condensation Kinetics of Water on Amorphous Aerosol Particles. Journal of Physical Chemistry Letters, 2018, 9, 3708-3713. | 2.1 | 18 |
| 85 | Measuring Mass-Based Hygroscopicity of Atmospheric Particles through in Situ Imaging. Environmental Science & Technology, 2016, 50, 5172-5180. | 4.6 | 17 |
| 86 | Observations of ice nucleation by ambient aerosol in the homogeneous freezing regime. Geophysical Research Letters, 2010, 37, . | 1.5 | 15 |
| 87 | Toward closure between predicted and observed particle viscosity over a wide range of temperatures and relative humidity. Atmospheric Chemistry and Physics, 2021, 21, 1127-1141. | 1.9 | 12 |
| 88 | Aerosol Properties Observed in the Subtropical North Pacific Boundary Layer. Journal of Geophysical Research D: Atmospheres, 2017, 122, 9990. | 1.2 | 11 |
| 89 | Observations of new particle formation, modal growth rates, and direct emissions of sub-10 nm particles in an urban environment. Atmospheric Environment, 2020, 242, 117835. | 1.9 | 10 |
| 90 | Characterization of a dimer preparation method for nanoscale organic aerosol. Aerosol Science and Technology, 2019, 53, 998-1011. | 1.5 | 9 |

| # | Article | IF | Citations |
|---|---|---|---|
| 91 | Bioaerosol Diversity and Ice Nucleating Particles in the Northâ€Western Himalayan Region. Journal of Geophysical Research D: Atmospheres, 2022, 127, . | 1.2 | 8 |
| 92 | Possible Wintertime Sources of Fine Particles in an Urban Environment. Journal of Geophysical Research D: Atmospheres, 2019, 124, 13055-13070. | 1.2 | 7 |
| 93 | Aerosol microphysical impact on summertime convective precipitation in the Rocky Mountain region. Journal of Geophysical Research D: Atmospheres, 2014, 119, 11,709-11,728. | 1.2 | 6 |
| 94 | Hygroscopicityâ€•and Sizeâ€Resolved Measurements of Submicron Aerosol on the East Coast of the United States. Journal of Geophysical Research D: Atmospheres, 2018, 123, 1826-1839. | 1.2 | 6 |
| 95 | Discrimination between individual dust and bioparticles using aerosol time-of-flight mass spectrometry. Aerosol Science and Technology, 2022, 56, 592-608. | 1.5 | 6 |
| 96 | Droplet activation of wet particles: development of the Wet CCN approach. Atmospheric Measurement Techniques, 2014, 7, 2227-2241. | 1.2 | 5 |
| 97 | Revisiting matrix-based inversion of scanning mobility particle sizer (SMPS) and humidified tandem differential mobility analyzer (HTDMA) data. Atmospheric Measurement Techniques, 2021, 14, 7909-7928. | 1.2 | 5 |
| 98 | Corrigendum to "An overview of the Amazonian Aerosol Characterization Experiment 2008 (AMAZE-08)" published in Atmos. Chem. Phys., 10, 11415â€“11438, 2010. Atmospheric Chemistry and Physics, 2010, 10, 11565-11565. | 1.9 | 4 |
| 99 | Classification of aerosol population type and cloud condensation nuclei properties in a coastal California littoral environment using an unsupervised cluster model. Atmospheric Chemistry and Physics, 2019, 19, 6931-6947. | 1.9 | 4 |
| 100 | Understanding aerosolâ€“cloud interactions through modeling the development of orographic cumulus congestus during IPHEx. Atmospheric Chemistry and Physics, 2019, 19, 1413-1437. | 1.9 | 4 |
| 101 | The role of dynamic surface tension in cloud droplet activation. , 2013, , . | | 3 |
| 102 | Continuous flow hygroscopicity-resolved relaxed eddy accumulation (Hy-Res REA) method of measuring size-resolved sodium chloride particle fluxes. Aerosol Science and Technology, 2018, 52, 433-450. | 1.5 | 3 |
| 103 | Open-hardware design and characterization of an electrostatic aerosol precipitator. HardwareX, 2022, 11, e00266. | 1.1 | 3 |
| 104 | Interactive Worksheets for Teaching Atmospheric Aerosols and Cloud Physics. Bulletin of the American Meteorological Society, 2021, 102, E672-E680. | 1.7 | 1 |
| 105 | Optical Particle Counter Measurement of Marine Aerosol Hygroscopic Growth. , 2007, , 1185-1189. | | 0 |