Joachim Curtius

List of Publications by Year
in descending order

137 papers	12,646 citations	28242 55 h-index	29127 104 g-index
210 all docs	210 docs citations	210 times ranked	6928 citing authors

#	Article	IF	Citations
1	Role of sulphuric acid, ammonia and galactic cosmic rays in atmospheric aerosol nucleation. Nature, 2011, 476, 429-433.	13.7	1,114
2	Size Matters More Than Chemistry for Cloud-Nucleating Ability of Aerosol Particles. Science, 2006, 312, 1375-1378.	6.0	871
3	Molecular understanding of sulphuric acidâ€“amine particle nucleation in the atmosphere. Nature, 2013, 502, 359-363.	13.7	774
4	The role of low-volatility organic compounds in initial particle growth in the atmosphere. Nature, 2016, 533, 527-531.	13.7	540
5	Ion-induced nucleation of pure biogenic particles. Nature, 2016, 533, 521-526.	13.7	528
6	Oxidation Products of Biogenic Emissions Contribute to Nucleation of Atmospheric Particles. Science, 2014, 344, 717-721.	6.0	456
7	New particle formation in the free troposphere: A question of chemistry and timing. Science, 2016, 352, 1109-1112.	6.0	348
8	Molecular understanding of atmospheric particle formation from sulfuric acid and large oxidized organic molecules. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 17223-17228.	3.3	300
9	Global atmospheric particle formation from CERN CLOUD measurements. Science, 2016, 354, 1119-1124.	6.0	289
10	Atmospheric ion-induced nucleation of sulfuric acid and water. Journal of Geophysical Research, 2004, 109, .	3.3	251
11	Neutral molecular cluster formation of sulfuric acidâ€“dimethylamine observed in real time under atmospheric conditions. Proceedings of the National Academy of Sciences of the United States of America, 2014, 111, 15019-15024.	3.3	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	Causes and importance of new particle formation in the presentâ€day and preindustrial atmospheres. Journal of Geophysical Research D: Atmospheres, 2017, 122, 8739-8760.	1.2	198
14	Measurement of fine particulate and gas-phase species during the New Year's fireworks 2005 in Mainz, Germany. Atmospheric Environment, 2006, 40, 4316-4327.	1.9	196
15	Laboratory study on new particle formation from the reaction OH + SO₂: influence of experimental conditions, H₂O vapour, NH₃ and the amine tert-butylamine on the overall process. Atmospheric Chemistry and Physics, 2010, 10, 7101-7116.	1.9	194
16	Rapid growth of new atmospheric particles by nitric acid and ammonia condensation. Nature, 2020, 581, 184-189.	13.7	169
17	Multicomponent new particle formation from sulfuric acid, ammonia, and biogenic vapors. Science Advances, 2018, 4, eaau5363.	4.7	164
18	Nitric Acid Trihydrate (NAT) formation at low NAT supersaturation in Polar Stratospheric Clouds (PSCs). Atmospheric Chemistry and Physics, 2005, 5, 1371-1380.	1.9	160

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19	Laboratory studies of the homogeneous nucleation of iodine oxides. Atmospheric Chemistry and Physics, 2004, 4, 19-34.	1.9	140
20	Enhanced organic mass fraction and decreased hygroscopicity of cloud condensation nuclei (CCN) during new particle formation events. Geophysical Research Letters, 2010, 37, .	1.5	138
21	Calibration of a Chemical Ionization Mass Spectrometer for the Measurement of Gaseous Sulfuric Acid. Journal of Physical Chemistry A, 2012, 116, 6375-6386.	1.1	132
22	Chemical composition of ambient aerosol, ice residues and cloud droplet residues in mixed-phase clouds: single particle analysis during the Cloud and Aerosol Characterization Experiment (CLACE 6). Atmospheric Chemistry and Physics, 2010, 10, 8077-8095.	1.9	127
23	ACRIDICONâ€“CHUVA Campaign: Studying Tropical Deep Convective Clouds and Precipitation over Amazonia Using the New German Research Aircraft HALO. Bulletin of the American Meteorological Society, 2016, 97, 1885-1908.	1.7	124
24	Testing mobile air purifiers in a school classroom: Reducing the airborne transmission risk for SARS-CoV-2. Aerosol Science and Technology, 2021, 55, 586-599.	1.5	119
25	Rapid growth of organic aerosol nanoparticles over a wide tropospheric temperature range. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 9122-9127.	3.3	118
26	Nucleation of atmospheric aerosol particles. Comptes Rendus Physique, 2006, 7, 1027-1045.	0.3	116
27	The effect of acidâ€“base clustering and ions on the growth of atmospheric nano-particles. Nature Communications, 2016, 7, 11594.	5.8	116
28	Observations of meteoric material and implications for aerosol nucleation in the winter Arctic lower stratosphere derived from in situ particle measurements. Atmospheric Chemistry and Physics, 2005, 5, 3053-3069.	1.9	113
29	PTR3: An Instrument for Studying the Lifecycle of Reactive Organic Carbon in the Atmosphere. Analytical Chemistry, 2017, 89, 5824-5831.	3.2	112
30	Single particle characterization of black carbon aerosols at a tropospheric alpine site in Switzerland. Atmospheric Chemistry and Physics, 2010, 10, 7389-7407.	1.9	109
31	Influence of fuel sulfur on the composition of aircraft exhaust plumes: The experiments SULFUR 1â€“7. Journal of Geophysical Research, 2002, 107, AAC 2-1.	3.3	108
32	Intercomparing different devices for the investigation of ice nucleating particles using Snomax^{Â®} as test substance. Atmospheric Chemistry and Physics, 2015, 15, 1463-1485.	1.9	108
33	Reduced anthropogenic aerosol radiative forcing caused by biogenic new particle formation. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 12053-12058.	3.3	107
34	ML-CIRRUS: The Airborne Experiment on Natural Cirrus and Contrail Cirrus with the High-Altitude Long-Range Research Aircraft HALO. Bulletin of the American Meteorological Society, 2017, 98, 271-288.	1.7	107
35	Evidence for ice particles in the tropical stratosphere from in-situ measurements. Atmospheric Chemistry and Physics, 2009, 9, 6775-6792.	1.9	100
36	Effect of ions on sulfuric acidâ€water binary particle formation: 2. Experimental data and comparison with QCâ€normalized classical nucleation theory. Journal of Geophysical Research D: Atmospheres, 2016, 121, 1752-1775.	1.2	99

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37	Results from the CERN pilot CLOUD experiment. Atmospheric Chemistry and Physics, 2010, 10, 1635-1647.	1.9	96
38	Quantifying transport into the lowermost stratosphere using simultaneous in-situ measurements of SF₆ and CO₂. Atmospheric Chemistry and Physics, 2009, 9, 5905-5919.	1.9	94
39	Role of iodine oxoacids in atmospheric aerosol nucleation. Science, 2021, 371, 589-595.	6.0	94
40	New particle formation in the sulfuric acidâ€“dimethylamineâ€“water system: reevaluation of CLOUD chamber measurements and comparison to an aerosol nucleation and growth model. Atmospheric Chemistry and Physics, 2018, 18, 845-863.	1.9	92
41	Inadvertent climate modification due to anthropogenic lead. Nature Geoscience, 2009, 2, 333-336.	5.4	91
42	Characterization of the mass-dependent transmission efficiency of a CIMS. Atmospheric Measurement Techniques, 2016, 9, 1449-1460.	1.2	85
43	On the composition of ammoniaâ€“sulfuric-acid ion clusters during aerosol particle formation. Atmospheric Chemistry and Physics, 2015, 15, 55-78.	1.9	84
44	Contribution of sulfuric acid and oxidized organic compounds to particle formation and growth. Atmospheric Chemistry and Physics, 2012, 12, 9427-9439.	1.9	76
45	Observation of new particle formation and measurement of sulfuric acid, ammonia, amines and highly oxidized organic molecules at a rural site in central Germany. Atmospheric Chemistry and Physics, 2016, 16, 12793-12813.	1.9	76
46	Applicability of condensation particle counters to measure atmospheric clusters. Atmospheric Chemistry and Physics, 2008, 8, 4049-4060.	1.9	74
47	Performance of a corona ion source for measurement of sulfuric acid by chemical ionization mass spectrometry. Atmospheric Measurement Techniques, 2011, 4, 437-443.	1.2	71
48	Experimental particle formation rates spanning tropospheric sulfuric acid and ammonia abundances, ion production rates, and temperatures. Journal of Geophysical Research D: Atmospheres, 2016, 121, 12,377.	1.2	71
49	Heterogeneous ice nucleation of viscous secondary organic aerosol produced from ozonolysis of <i>Î±</i>-pinene. Atmospheric Chemistry and Physics, 2016, 16, 6495-6509.	1.9	71
50	Molecular understanding of new-particle formation from <i>Î±</i>-pinene between âˆ’50 and +25â€‰Â°C. Atmospheric Chemistry and Physics, 2020, 20, 9183-9207.	1.9	68
51	Cluster Ion Thermal Decomposition (I):â€‰ Experimental Kinetics Study and ab Initio Calculations for HSO4-(H2SO4)x(HNO3)y. Journal of Physical Chemistry A, 2001, 105, 10867-10873.	1.1	66
52	Atmospheric Ion-induced Aerosol Nucleation. Space Science Reviews, 2007, 125, 159-167.	3.7	66
53	In situ observations of new particle formation in the tropical upper troposphere: the role of clouds and the nucleation mechanism. Atmospheric Chemistry and Physics, 2011, 11, 9983-10010.	1.9	66
54	Performance of diethylene glycol-based particle counters in the sub-3 nm size range. Atmospheric Measurement Techniques, 2013, 6, 1793-1804.	1.2	63

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55	Atmospheric ice nuclei in the EyjafjallajÃ¶kull volcanic ash plume. Atmospheric Chemistry and Physics, 2012, 12, 857-867.	1.9	62
56	Ice nucleating particles over the Eastern Mediterranean measured by unmanned aircraft systems. Atmospheric Chemistry and Physics, 2017, 17, 4817-4835.	1.9	62
57	Size-dependent influence of NO _x on the growth rates of organic aerosol particles. Science Advances, 2020, 6, eaay4945.	4.7	61
58	Aerosols in the tropical and subtropical UT/LS: in-situ measurements of submicron particle abundance and volatility. Atmospheric Chemistry and Physics, 2010, 10, 5573-5592.	1.9	59
59	In situ measurements of tropical cloud properties in the West African Monsoon: upper tropospheric ice clouds, Mesoscale Convective System outflow, and subvisual cirrus. Atmospheric Chemistry and Physics, 2011, 11, 5569-5590.	1.9	59
60	Enhanced growth rate of atmospheric particles from sulfuric acid. Atmospheric Chemistry and Physics, 2020, 20, 7359-7372.	1.9	58
61	Influence of temperature on the molecular composition of ions and charged clusters during pure biogenic nucleation. Atmospheric Chemistry and Physics, 2018, 18, 65-79.	1.9	56
62	Cluster Ion Thermal Decomposition (II):â€‰ Master Equation Modeling in the Low-Pressure Limit and Fall-Off Regions. Bond Energies for HSO4-(H2SO4)x(HNO3)y. Journal of Physical Chemistry A, 2001, 105, 10874-10883.	1.1	54
63	First direct sulfuric acid detection in the exhaust plume of a jet aircraft in flight. Geophysical Research Letters, 1998, 25, 923-926.	1.5	53
64	Characterization of a Newly Developed Aircraft-Based Laser Ablation Aerosol Mass Spectrometer (ALABAMA) and First Field Deployment in Urban Pollution Plumes over Paris During MEGAPOLI 2009. Aerosol Science and Technology, 2011, 45, 46-64.	1.5	53
65	Formation of Highly Oxygenated Organic Molecules from Î±-Pinene Ozonolysis: Chemical Characteristics, Mechanism, and Kinetic Model Development. ACS Earth and Space Chemistry, 2019, 3, 873-883.	1.2	52
66	Insight into Acidâ€“Base Nucleation Experiments by Comparison of the Chemical Composition of Positive, Negative, and Neutral Clusters. Environmental Science & Technology, 2014, 48, 13675-13684.	4.6	51
67	The role of ions in new particle formation in the CLOUD chamber. Atmospheric Chemistry and Physics, 2017, 17, 15181-15197.	1.9	50
68	Molecular understanding of the suppression of new-particle formation by isoprene. Atmospheric Chemistry and Physics, 2020, 20, 11809-11821.	1.9	49
69	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
70	Experimental characterization of the COndensation PArticle counting System for high altitude aircraft-borne application. Atmospheric Measurement Techniques, 2009, 2, 243-258.	1.2	47
71	Aqueous phase oxidation of sulphur dioxide by ozone in cloud droplets. Atmospheric Chemistry and Physics, 2016, 16, 1693-1712.	1.9	47
72	Experimental investigation of ionâ€“ion recombination under atmospheric conditions. Atmospheric Chemistry and Physics, 2015, 15, 7203-7216.	1.9	46

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73	A fibre-optic UV system for H2SO4 production in aerosol chambers causing minimal thermal effects. Journal of Aerosol Science, 2011, 42, 532-543.	1.8	44
74	Aerosol production and growth in the upper free troposphere. Journal of Geophysical Research, 2000, 105, 24751-24762.	3.3	42
75	Online single particle analysis of ice particle residuals from mountain-top mixed-phase clouds using laboratory derived particle type assignment. Atmospheric Chemistry and Physics, 2017, 17, 575-594.	1.9	39
76	Title is missing!. Journal of Atmospheric Chemistry, 1998, 30, 3-10.	1.4	38
77	Trace Detection of Organic Compounds in Complex Sample Matrixes by Single Photon Ionization Ion Trap Mass Spectrometry: Real-Time Detection of Security-Relevant Compounds and Online Analysis of the Coffee-Roasting Process. Analytical Chemistry, 2009, 81, 4456-4467.	3.2	38
78	Single-particle characterization of ice-nucleating particles and ice particle residuals sampled by three different techniques. Atmospheric Chemistry and Physics, 2015, 15, 4161-4178.	1.9	38
79	The driving factors of new particle formation and growth in the polluted boundary layer. Atmospheric Chemistry and Physics, 2021, 21, 14275-14291.	1.9	38
80	Evolution of particle composition in CLOUD nucleation experiments. Atmospheric Chemistry and Physics, 2013, 13, 5587-5600.	1.9	33
81	On the derivation of particle nucleation rates from experimental formation rates. Atmospheric Chemistry and Physics, 2015, 15, 4063-4075.	1.9	33
82	HNO3partitioning in cirrus clouds. Geophysical Research Letters, 1999, 26, 2207-2210.	1.5	32
83	Molecular Composition and Volatility of Nucleated Particles from Î±-Pinene Oxidation between âˆ’50 Â°C and +25 Â°C. Environmental Science & Technology, 2019, 53, 12357-12365.	4.6	32
84	Bisulfate â€“ cluster based atmospheric pressure chemical ionization mass spectrometer for high-sensitivity (< 100 ppqV) detection of atmospheric dimethyl amine: proof-of-concept and first ambient data from boreal forest. Atmospheric Measurement Techniques, 2015, 8, 4001-4011.	1.2	30
85	Digital crossed-beam holography forin situimaging of atmospheric ice particles. Journal of Optics, 2006, 8, 796-806.	1.5	29
86	Influence of aerosol lifetime on the interpretation of nucleation experiments with respect to the first nucleation theorem. Atmospheric Chemistry and Physics, 2013, 13, 11465-11471.	1.9	29
87	Hygroscopicity of nanoparticles produced from homogeneous nucleation in the CLOUD experiments. Atmospheric Chemistry and Physics, 2016, 16, 293-304.	1.9	29
88	Measurement of aerosol sulfuric acid: 2. Pronounced layering in the free troposphere during the second Aerosol Characterization Experiment (ACE 2). Journal of Geophysical Research, 2001, 106, 31975-31990.	3.3	28
89	Thermodynamics of the formation of sulfuric acid dimers in the binary (H₂SO₄â€“H<sub>2</sub and ternary (H₂SO₄â€“H<sub>2</sub system. Atmospheric Chemistry and Physics, 2015, 15, 10701-10721.	1.9	27
90	Detection of dimethylamine in the low pptv range using nitrate chemical ionization atmospheric pressure interface time-of-flight (CI-APi-TOF) mass spectrometry. Atmospheric Measurement Techniques, 2016, 9, 2135-2145.	1.2	27

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91	Lasing on a cloudy afternoon. Nature, 2002, 418, 826-827.	13.7	26
92	Comparison of Two Aerodynamic Lenses as an Inlet for a Single Particle Laser Ablation Mass Spectrometer. Aerosol Science and Technology, 2008, 42, 970-980.	1.5	26
93	Synergistic HNO3â€"H2SO4â€"NH3 upper tropospheric particle formation. Nature, 2022, 605, 483-489.	13.7	26
94	Sulfuric acid measurements in the exhaust plume of a jet aircraft in flight: Implications for the sulfuric acid formation efficiency. Geophysical Research Letters, 2002, 29, 17-1.	1.5	24
95	Long-term deposition and condensation ice-nucleating particle measurements from four stations across the globe. Atmospheric Chemistry and Physics, 2020, 20, 15983-16006.	1.9	24
96	Detection of massive negative chemiions in the exhaust plume of a jet aircraft in flight. Geophysical Research Letters, 1999, 26, 1577-1580.	1.5	23
97	Observation of NOyuptake by particles in the Arctic tropopause region at low temperatures. Geophysical Research Letters, 1999, 26, 2215-2218.	1.5	23
98	Measurementâ€"model comparison of stabilized Criegee intermediateÂand highly oxygenated molecule productionÂinÂtheÂCLOUDÂchamber. Atmospheric Chemistry and Physics, 2018, 18, 2363-2380.	1.9	21
99	Measurement of ammonia, amines and iodine compounds using protonated water cluster chemical ionization mass spectrometry. Atmospheric Measurement Techniques, 2020, 13, 2501-2522.	1.2	21
100	The temporal evolution of the ratio HNO3/NOyin the Arctic lower stratosphere from January to March 1997. Geophysical Research Letters, 1999, 26, 1125-1128.	1.5	18
101	Characterization of an Automated, Water-Based Expansion Condensation Nucleus Counter for Ultrafine Particles. Aerosol Science and Technology, 2005, 39, 1174-1183.	1.5	18
102	Determination of the collision rate coefficient between charged iodic acid clusters and iodic acid using the appearance time method. Aerosol Science and Technology, 2021, 55, 231-242.	1.5	18
103	Elemental composition and clustering behaviour of Î±-pinene oxidation products for different oxidation conditions. Atmospheric Chemistry and Physics, 2015, 15, 4145-4159.	1.9	17
104	Effect of dimethylamine on the gas phase sulfuric acid concentration measured by Chemical Ionization Mass Spectrometry. Journal of Geophysical Research D: Atmospheres, 2016, 121, 3036-3049.	1.2	17
105	Comparison of the SAWNUC model with CLOUD measurements of sulphuric acidâ€water nucleation. Journal of Geophysical Research D: Atmospheres, 2016, 121, 12401-12414.	1.2	16
106	Size-resolved online chemical analysis of nanoaerosol particles: a thermal desorption differential mobility analyzer coupled to a chemical ionization time-of-flight mass spectrometer. Atmospheric Measurement Techniques, 2018, 11, 5489-5506.	1.2	16
107	Development and characterization of an ion trap mass spectrometer for the on-line chemical analysis of atmospheric aerosol particles. International Journal of Mass Spectrometry, 2007, 265, 30-39.	0.7	15
108	Measurement of iodine species and sulfuric acid using bromide chemical ionization mass spectrometers. Atmospheric Measurement Techniques, 2021, 14, 4187-4202.	1.2	13

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109	Characterization of a Modified Expansion Condensation Particle Counter for Detection of Nanometer-Sized Particles. Aerosol Science and Technology, 2009, 43, 767-780.	1.5	12
110	Chemical composition of nanoparticles from <i>Î±</i>-pinene nucleation and the influence of isoprene and relative humidity at low temperature. Atmospheric Chemistry and Physics, 2021, 21, 17099-17114.	1.9	12
111	Nucleation of atmospheric particles. EPJ Web of Conferences, 2009, 1, 199-209.	0.1	11
112	Technical Note: Using DEG-CPCs at upper tropospheric temperatures. Atmospheric Chemistry and Physics, 2015, 15, 7547-7555.	1.9	11
113	Evaporation of sulfate aerosols at low relative humidity. Atmospheric Chemistry and Physics, 2017, 17, 8923-8938.	1.9	11
114	Molecular characterization of ultrafine particles using extractive electrospray time-of-flight mass spectrometry. Environmental Science Atmospheres, 2021, 1, 434-448.	0.9	10
115	Field evaluation of a Portable Fine Particle Concentrator (PFPC) for ice nucleating particle measurements. Aerosol Science and Technology, 2019, 53, 1067-1078.	1.5	9
116	Measurement of aerosol sulfuric acid: 1. Experimental setup, characterization, and calibration of a novel mass spectrometric system. Journal of Geophysical Research, 2001, 106, 31965-31974.	3.3	8
117	Survival of newly formed particles in haze conditions. Environmental Science Atmospheres, 2022, 2, 491-499.	0.9	8
118	Effect of ions on the measurement of sulfuric acid in the CLOUD experiment at CERN. Atmospheric Measurement Techniques, 2014, 7, 3849-3859.	1.2	7
119	Kinetics, thermodynamics, and ab initio calculations of HS2O7â^’(H2SO4)x (x=1â€“3) cluster ions. International Journal of Mass Spectrometry, 2004, 232, 9-15.	0.7	6
120	Characterization of Aerosol Particles Produced by a Skyscraper Demolition by Blasting. Journal of Aerosol Science, 2017, 112, 11-18.	1.8	6
121	Ice-nucleating particle concentrations of the past: insights from a 600-year-old Greenland ice core. Atmospheric Chemistry and Physics, 2020, 20, 12459-12482.	1.9	6
122	Firework Emissions for Satellite Validation?. Environmental Chemistry, 2005, 2, 94.	0.7	4
123	Characterization of diethylene glycol-condensation particle counters for detection of sub-3 nm particles. , 2013, , .		2
124	Role of organics in particle nucleation: From the lab to global model. , 2013, , .		1
125	Measurements of IN and BIO-IN with the fast ice nucleus chamber FINCH at Mt. Zugspitze, Mt. Puy de Do^me and Jungfraujoch during fall and winter. , 2013, , .		1
126	Evolution of nanoparticle composition in CLOUD in presence of sulphuric acid, ammonia and organics. , 2013, , .		1

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127	Multi-species nucleation rates in CLOUD. , 2013, , .		1
128	Nucleation modeling of the Antarctic stratospheric CN layer and derivation of sulfuric acid profiles. Atmospheric Chemistry and Physics, 2017, 17, 7581-7591.	1.9	1
129	Indications for aerosol growth in the free troposphere during the ACE-2 experiment. Journal of Aerosol Science, 1998, 29, S1099-S1100.	1.8	0
130	ION-INDUCED NUCLEATION OF SULFURIC ACID AND WATER IN THE ATMOSPHERE: KINETIC NUCLEATION MODELING WITH MEASURED THERMOCHEMISTRY. Journal of Aerosol Science, 2004, 35, S1193-S1194.	1.8	0
131	Detection of security relevant substances within the cooperative project SAFE XUV. , 2008, , .		0
132	Ternary H[sub 2]SO[sub 4]-H[sub 2]O-NH[sub 3] neutral and charged nucleation rates for a wide range of atmospheric conditions. , 2013, , .		0
133	Measurement of neutral sulfuric acid-dimethylamine clusters using CI-APi-TOF-MS. , 2013, , .		0
134	A double inversion: Size and time resolved growth rates for aerosol particles in the CERN CLOUD experiment. , 2013, , .		0
135	Particle nucleation events at the high Alpine station Jungfraujoch. , 2013, , .		0
136	Simulation of ion-induced nucleation in the CLOUD chamber. , 2013, , .		0
137	Experimental study on the influence of dimethylamine on the detection of gas phase sulfuric acid using chemical ionization mass spectrometry (CIMS). , 2013, , .		0