Michael Kahnert

List of Publications by Year
in descending order

67 papers	1,981 citations	201385 27 h-index	276539 41 g-index
89 all docs	89 docs citations	89 times ranked	1627 citing authors

#	Article	IF	Citations
1	Observations of the spectral dependence of linear particle depolarization ratio of aerosols using NASA Langley airborne High Spectral Resolution Lidar. Atmospheric Chemistry and Physics, 2015, 15, 13453-13473.	1.9	166
2	Light scattering modeling of small feldspar aerosol particles using polyhedral prisms and spheroids. Journal of Quantitative Spectroscopy and Radiative Transfer, 2006, 101, 471-487.	1.1	87
3	Optical properties of light absorbing carbon aggregates mixed with sulfate: assessment of different model geometries for climate forcing calculations. Optics Express, 2012, 20, 10042.	1.7	87
4	Modelling light scattering by mineral dust using spheroids: assessment of applicability. Atmospheric Chemistry and Physics, 2011, 11, 5347-5363.	1.9	74
5	Mie simulations as an error source in mineral aerosol radiative forcing calculations. Quarterly Journal of the Royal Meteorological Society, 2007, 133, 299-307.	1.0	71
6	On the Discrepancy between Modeled and Measured Mass Absorption Cross Sections of Light Absorbing Carbon Aerosols. Aerosol Science and Technology, 2010, 44, 453-460.	1.5	71
7	Black carbon fractal morphology and short-wave radiative impact: a modelling study. Atmospheric Chemistry and Physics, 2011, 11, 11745-11759.	1.9	71
8	Spherical and spheroidal model particles as an error source in aerosol climate forcing and radiance computations: A case study for feldspar aerosols. Journal of Geophysical Research, 2005, 110, .	3.3	70
9	Can particle shape information be retrieved from light-scattering observations using spheroidal model particles?. Journal of Quantitative Spectroscopy and Radiative Transfer, 2011, 112, 2213-2225.	1.1	69
10	Variational data analysis of aerosol species in a regional CTM: background error covariance constraint and aerosol optical observation operators. Tellus, Series B: Chemical and Physical Meteorology, 2008, 60, 753-770.	0.8	62
11	Models for integrated and differential scattering optical properties of encapsulated light absorbing carbon aggregates. Optics Express, 2013, 21, 7974.	1.7	60
12	Review: Model particles in atmospheric optics. Journal of Quantitative Spectroscopy and Radiative Transfer, 2014, 146, 41-58.	1.1	58
13	The European aerosol budget in 2006. Atmospheric Chemistry and Physics, 2011, 11, 1117-1139.	1.9	56
14	Reproducing the optical properties of fine desert dust aerosols using ensembles of simple model particles. Journal of Quantitative Spectroscopy and Radiative Transfer, 2004, 85, 231-249.	1.1	52
15	Numerical solutions of the macroscopic Maxwell equations for scattering by non-spherical particles: A tutorial review. Journal of Quantitative Spectroscopy and Radiative Transfer, 2016, 178, 22-37.	1.1	49
16	Irreducible representations of finite groups in the T-matrix formulation of the electromagnetic scattering problem. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2005, 22, 1187.	0.8	47
17	Comparison of scattering by different nonspherical, wavelength-scale particles. Journal of Quantitative Spectroscopy and Radiative Transfer, 2012, 113, 2391-2405.	1.1	46
18	Modelling optical properties of atmospheric black carbon aerosols. Journal of Quantitative Spectroscopy and Radiative Transfer, 2020, 244, 106849.	1.1	46

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19	Light scattering by particles with small-scale surface roughness: Comparison of four classes of model geometries. Journal of Quantitative Spectroscopy and Radiative Transfer, 2012, 113, 2356-2367.	1.1	45
20	Volcanic ash infrared signature: porous non-spherical ash particle shapes compared to homogeneous spherical ash particles. Atmospheric Measurement Techniques, 2014, 7, 919-929.	1.2	44
21	Light scattering by a cube: Accuracy limits of the discrete dipole approximation and the T-matrix method. Journal of Quantitative Spectroscopy and Radiative Transfer, 2013, 123, 176-183.	1.1	42
22	Optical properties of black carbon aerosols encapsulated in a shell of sulfate: comparison of the closed cell model with a coated aggregate model. Optics Express, 2017, 25, 24579.	1.7	41
23	Uncertainties in measured and modelled asymmetry parameters of mineral dust aerosols. Journal of Quantitative Spectroscopy and Radiative Transfer, 2006, 100, 173-178.	1.1	35
24	Modeling optical properties of particles with small-scale surface roughness: combination of group theory with a perturbation approach. Optics Express, 2011, 19, 11138.	1.7	34
25	Radiance and flux simulations for mineral dust aerosols: Assessing the error due to using spherical or spheroidal model particles. Journal of Geophysical Research, 2004, 109, .	3.3	32
26	On the impact of non-sphericity and small-scale surface roughness on the optical properties of hematite aerosols. Journal of Quantitative Spectroscopy and Radiative Transfer, 2011, 112, 1815-1824.	1.1	32
27	Modelling radiometric properties of inhomogeneous mineral dust particles: Applicability and limitations of effective medium theories. Journal of Quantitative Spectroscopy and Radiative Transfer, 2015, 152, 16-27.	1.1	29
28	The T-matrix code Tsym for homogeneous dielectric particles with finite symmetries. Journal of Quantitative Spectroscopy and Radiative Transfer, 2013, 123, 62-78.	1.1	24
29	Impact of dust particle nonâ€sphericity on climate simulations. Quarterly Journal of the Royal Meteorological Society, 2013, 139, 2222-2232.	1.0	20
30	On the observability of chemical and physical aerosol properties by optical observations: Inverse modelling with variational data assimilation. Tellus, Series B: Chemical and Physical Meteorology, 2022, 61, 747.	0.8	19
31	Calculation of optical properties of light-absorbing carbon with weakly absorbing coating: A model with tunable transition from film-coating to spherical-shell coating. Journal of Quantitative Spectroscopy and Radiative Transfer, 2018, 216, 17-36.	1.1	18
32	Impact of ice particle shape on short-wave radiative forcing: A case study for an arctic ice cloud. Journal of Quantitative Spectroscopy and Radiative Transfer, 2008, 109, 1196-1218.	1.1	17
33	Electromagnetic scattering by nonspherical particles: Recent advances. Journal of Quantitative Spectroscopy and Radiative Transfer, 2010, 111, 1788-1790.	1.1	17
34	Sensitivity of the shortwave radiative effect of dust on particle shape: Comparison of spheres and spheroids. Journal of Geophysical Research, 2012, 117, .	3.3	17
35	Light scattering by the Martian dust analog, palagonite, modeled with ellipsoids. Optics Express, 2013, 21, 17972.	1.7	17
36	Electromagnetic Wave Scattering on Nonspherical Particles. Springer Series in Optical Sciences, 2014, , .	0.5	17

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37	A case study on the reciprocity in light scattering computations. Optics Express, 2012, 20, 23253.	1.7	16
38	Coupling aerosol optics to the MATCH (v5.5.0) chemical transport model and the SALSA (v1) aerosol microphysics module. Geoscientific Model Development, 2016, 9, 1803-1826.	1.3	16
39	Aerosol-optics model for the backscatter depolarisation ratio of mineral dust particles. Journal of Quantitative Spectroscopy and Radiative Transfer, 2020, 254, 107177.	1.1	16
40	Modeling Optical Properties of Nonâ€Cubical Seaâ€Salt Particles. Journal of Geophysical Research D: Atmospheres, 2021, 126, e2020JD033674.	1.2	16
41	Variational data-analysis method for combining laboratory-measured light-scattering phase functions and forward-scattering computations. Journal of Quantitative Spectroscopy and Radiative Transfer, 2007, 103, 27-42.	1.1	15
42	How much information do extinction and backscattering measurements contain about the chemical composition of atmospheric aerosol?. Atmospheric Chemistry and Physics, 2017, 17, 3423-3444.	1.9	13
43	Requirements for developing a regional monitoring capacity for aerosols in Europe within EMEP. Journal of Environmental Monitoring, 2004, 6, 646-655.	2.1	12
44	Disk and circumsolar radiances in the presence of ice clouds. Atmospheric Chemistry and Physics, 2017, 17, 6865-6882.	1.9	12
45	Methodology for evaluating lateral boundary conditions in the regional chemical transport model MATCH (v5.5.0) using combined satellite and ground-based observations. Geoscientific Model Development, 2015, 8, 3747-3763.	1.3	11
46	The influence of observed cirrus microphysical properties on shortwave radiation: A case study over Oklahoma. Journal of Geophysical Research, 2011, 116, n/a-n/a.	3.3	10
47	Aerosol optics model for black carbon applicable to remote sensing, chemical data assimilation, and climate modelling. Optics Express, 2021, 29, 10639.	1.7	10
48	Marine aerosol properties over the Southern Ocean in relation to the wintertime meteorological conditions. Atmospheric Chemistry and Physics, 2022, 22, 119-137.	1.9	10
49	Boundary symmetries in linear differential and integral equation problems applied to the self-consistent Greenâ€™s function formalism of acoustic and electromagnetic scattering. Optics Communications, 2006, 265, 383-393.	1.0	9
50	Coating material-dependent differences in modelled lidar-measurable quantities for heavily coated soot particles. Optics Express, 2019, 27, 36368.	1.7	9
51	T-matrix computations for particles with high-order finite symmetries. Journal of Quantitative Spectroscopy and Radiative Transfer, 2013, 123, 79-91.	1.1	8
52	Integration of prognostic aerosolâ€"cloud interactions in a chemistry transport model coupled offline to a regional climate model. Geoscientific Model Development, 2015, 8, 1885-1898.	1.3	8
53	Optical properties of water-coated sea salt model particles. Optics Express, 2021, 29, 34926.	1.7	8
54	Microwave single-scattering properties of non-spheroidal raindrops. Atmospheric Measurement Techniques, 2020, 13, 6933-6944.	1.2	8

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55	Multi-species chemical data assimilation with the Danish Eulerian hemispheric model: system description and verification. Journal of Atmospheric Chemistry, 2016, 73, 261-302.	1.4	5
56	Multiple scattering by aerosols as seen from CALIPSO â€" a Monte-Carlo modelling study. Optics Express, 2019, 27, 33683.	1.7	5
57	Morphological Models for Inhomogeneous Particles: Light Scattering by Aerosols, Cometary Dust, and Living Cells. , 2016, , 299-337.		3
58	Information constraints in variational data assimilation. Quarterly Journal of the Royal Meteorological Society, 2018, 144, 2230-2244.	1.0	3
59	Invariant-imbedding T-matrix method. , 2020, , 145-188.		3
60	Exploiting the favourable alignment of CALIPSO's descending orbital tracks over Sweden to study aerosol characteristics. Tellus, Series B: Chemical and Physical Meteorology, 2013, 65, 21155.	0.8	2
61	Light scattering by particles with boundary symmetries. , 2008, , 69-107.		2
62	Convergence of the iterative T-matrix method. Optics Express, 2020, 28, 28269.	1.7	2
63	Poster 17 2D variational data assimilation of near-surface chemical species. Developments in Environmental Science, 2007, 6, 787-789.	0.5	1
64	Ensemble Perturbations for Chemical Data Assimilation. NATO Science for Peace and Security Series C: Environmental Security, 2014, , 221-225.	0.1	1
65	T-matrix concept. , 2020, , 57-144.		0
66	Numerical Simulations of Scattering Experiments. Springer Series in Optical Sciences, 2014, , 287-343.	0.5	0
67	Recommended Literature. Springer Series in Optical Sciences, 2014, , 345-355.	0.5	0