Dr. PING YANG
University Distinguished Professor & Holder of David Bullock Harris Chair
Department of Atmospheric Sciences
Department of Physics & Astronomy (Adjunct Appointment)
Department of Oceanography (Adjunct Appointment)
Institute for Quantum Science and Engineering (Affiliation)
College of Arts and Sciences
Texas A&M University
College Station, TX 77843, USA
Tel: 979-845-7679, Fax: 979-862-4466; Email: pyang@tamu.edu

(Updated on May 8, 2025)

Education

- Ph.D., 1995, Meteorology, University of Utah, Salt Lake City, Utah, U.S.A.
- M.S., 1988, Atmospheric Physics, Lanzhou Institute of Plateau Atmospheric Physics, Chinese Academy of Science, Lanzhou, China
- B.S., 1985, Theoretical Physics, Lanzhou University, Lanzhou, China

Appointments

- University Distinguished Professor (2020-present), Texas A&M University (TAMU)
- Senior Associate Dean for Research (6/1/2022-8/31/2024), College of Arts and Sciences (*the college consists of 32 institutes/centers and 18 academic departments: Physics & Astronomy, Chemistry, Biology, Mathematics, Atmospheric Sciences, Oceanography, Geology & Geophysics, Geography…History, English, Philosophy*), TAMU
- Associate Dean for Research (interim appointment, 9/1/2019-2/29/2020; formal appointment, 3/1/2020-8/31/2022), College of Geosciences, TAMU
- Department Head (09/01/2012-8/31/2018), Department of Atmospheric Sciences, TAMU
- Professor (09/2008-present), Dept. of Atmospheric Sciences, TAMU
- Adjunct Professor (07/2021-present), Dept. of Oceanography, TAMU
- Adjunct Professor (06/2009-present), Dept. of Physics & Astronomy, TAMU
- Holder of the David Bullock Harris Chair in Geosciences (College of Geosciences, 1/1/2010-8/31/2022; College of Arts & Sciences, 9/1/2022-present), TAMU
- Affiliation with (2021-present) the Institute for Quantum Science & Engineering, TAMU
- Associate Professor (09/2005-08/2008), Dept. of Atmospheric Sciences, TAMU
- Assistant Professor (09/2001-08/2005), Dept. of Atmospheric Sciences, TAMU
- Associate Research Scientist (03/2001-09/2001), Goddard Earth Sciences and Technology Center, University of Maryland Baltimore County, Baltimore, Maryland
- Research Scientist (01/1999-02/2001), Science and System Application, Inc. Lanham, Maryland (worked on-site in code 913, NASA Goddard Space Flight Center, Greenbelt, Maryland)
- Assistant Research Scientist (12/1997-01/1999), Department of Atmospheric Sciences, University of California, Los Angeles

- Research Associate (01/1996-11/1997), Department of Meteorology/Center for Atmospheric Remote Sensing Study, University of Utah, Salt Lake City, Utah
- Graduate Research Assistant (1992-1995), Department of Meteorology/Center for Atmospheric Remote Sensing Study, University of Utah, Salt Lake City, Utah

Extramural Awards/Honors

- **Fellow of the Institute of Electrical and Electronics Engineers (*IEEE*)**
- **Fellow of the *American Association for the Advancement of Science* (*AAAS*)**
- **Fellow of the *American Physical Society (APS*)**
- **Fellow of *The Electromagnetics Academy* (*TEA*)**
- **Fellow of the *American Geophysical Union* (*AGU*)**
- **Fellow of the *American Meteorological Society* (*AMS*)**
- **Fellow of *OPTICA* (**formerly, the ***Optical Society of America*, *OSA*)**

- **Humboldt Research Award** (2025) by Alexander von Humboldt Foundation**.** According to the foundation, "*The Humboldt Research Award is conferred to internationally recognised researchers in recognition of their entire academic record to date."*
- **The 2024 Robert H. Goddard (RHG) – Exceptional Achievement for Science Award** to MODIS/VIIRS Cloud Products Science Team by NASA Goddard Space Flight Center (Ping Yang, as a team member, is a recipient of this award)
- **The 2024 International Radiation Commission (IRC) Gold Medal Award**. Note: the IRC is the oldest of the ten commissions of the International Association of Meteorology and Atmospheric Sciences (IAMAS), itself one of the associations of the International Union of Geodesy and Geophysics (IUGG). The IRC is also the longest running commission under IUGG. **The IRC Gold Medal Award is bestowed <u>every four years</u>.** The previous IRC Gold Medalists include:
    - 2004: Dr. Richard Goody (deceased), U.S. National Academy of Sciences member; Professor Emeritus, Harvard University
    - 2008: Dr. Graeme Stephens, U.S. National Academy of Engineering member; NASA Jet Propulsion Laboratory (JPL)
    - 2012: Dr. Kuo-Nan Liou (deceased), U.S. National Academy of Engineering member; Distinguished Professor, University of California, Los Angles (UCLA)
    - 2016: Dr. Teruyuki Nakajima, Professor Emeritus, University of Tokyo, Japan
    - 2022 (delayed due to the COVID pandemic): Dr. William L. Smith, Sr., Professor Emeritus, University of Wisconsin-Madison
- ***Distinguished Texas Scientist*** **(2022), Texas Academy of Science:** Each year, the Board of Directors of the Texas Academy of Science **honors only one researcher in Texas** as the *Distinguished Texas Scientist*.
- ***Van de Hulst Light-Scattering Award*** **(2022):** this award, sponsored by Elsevier **biennially**, is the most prestigious award in the field of electromagnetic and light scattering by particles. The award selection was determined by an international committee composed of at least 20 leading experts in the field, as stated in the call for nominations.
- **Award of Appreciation (2021):** "In appreciation of your outstanding service as Editor of the Board of the Journal of the Atmospheric Sciences" by the American Meteorological Society
- ***David and Lucille Atlas Remote Sensing Prize*** (2020) bestowed **biennially** by the American Meteorological Society (AMS); "For sustained, seminal contributions to developing

light-scattering and radiative transfer models and datasets for remote sensing of ice clouds and dust aerosols."

- ***NASA Exceptional Scientific Achievement Medal*** **(2017)** (only six medals of this category were bestowed by NASA in 2017. According to NASA, this medal is "one of the Agency's most prestigious honor awards for outstanding contributions to the Agency's mission.")
- ***Ascent Award*** **(2013) by the American Geophysical Union (AGU) Atmospheric Sciences Section** (Five awards were given in 2013. **"**Established in 2012, the Atmospheric Sciences Ascent Award aims to reward exceptional mid-career (academic, government, and private sector) scientists in the fields of the atmospheric and climate sciences. "Mid-career" is defined here as between 8 and 20 years post-Ph.D or the scientist's highest degree. The only criterion for the award is that the applicant demonstrates excellence in research and leadership in his or her field.")
- ***Distinguished Alumni Award*** (2017), Department of Atmospheric Sci., University of Utah
- ***NASA Group Achievement Award*** to ACCRI Aircraft Cloud Effects Team (8/30/2013)
- ***NASA Group Achievement Award*** to CERES Clouds Team (8/30/2013)
- ***Certificate of Appreciation***, National Institute of Standards and Technology (NIST, March 2011)
- ***Certificate of Appreciation***, NASA (November 2010)
- ***National Science Foundation (NSF) CAREER Award*** (2003)
- ***NASA Group Achievement Award*** to CRYSTAL-FACE Science Team (2003)
- ***Best Paper Award*** (2000), Climate and Radiation Branch, NASA Goddard Space Flight Center.

TAMU Awards/Honors

- ***University Distinguished Professor*** **(elected 2020)**, Texas A&M University. In 2020 "Seven Texas A&M University scholars have earned the university's highest faculty honor by being named Distinguished Professors. The 2020 class of University Distinguished Professors includes faculty from the College of Agriculture and Life Sciences, the College of Engineering, the College of Geosciences, the School of Law, and the College of Science."
- ***The Selfless Service Award*** **(2018),** College of Geosciences, Texas A&M University
- ***University-level Distinguished Achievement Award*** **in the category of Faculty Research (2017), the Association of Former Students (AFS) and Texas A&M University.** (Six awards per year at TAMU. This award recognizes, encourages, and rewards individuals whose research efforts have been particularly significant and outstanding and are recognized locally, nationally, and internationally. The results of these research efforts have added substantially to the basic body of knowledge, contributed to the improvement of the quality of life, and/or encouraged additional research. The selection was made by a university-wide committee)
- **Holder of the David Bullock Harris Chair in Geosciences** (College of Geosciences, 1/1/2010-8/31/2022; College of Arts & Sciences, 9/1/2022-present), Texas A&M University
- ***The Association of Former Students' (AFS) College-level Teaching Award*** (2008), College of Geosciences, Texas A&M University.

• ***Dean's Distinguished Achievement Award for Faculty Research*** (2004), College of Geosciences, Texas A&M University.

Editorship

Editor-in-Chief (9/1/2020-8/20/2024; resigned due to my health condition during the late summer of 2024) and **Associate Editor** (01/2007-8/31/2020): *Journal of Quantitative Spectroscopy & Radiative Transfer* this is one of the most prestigious journals in the discipline of light scattering and radiative transfer)

Editor (1/2020-8/20/2024; resigned due to my health condition during the late summer of 2024) and **Associate Editor** (1/2018-12/2019): *Journal of Geophysical Research-Atmospheres* (this is one of the most prestigious journals in the discipline of Atmospheric Sciences).

Section Editor (3/2022-8/15/2024; resigned due to my health condition)**,** *Encyclopedia of Atmospheric Sciences***,** 3rd Edition, Elsevier**.**

Editor (4/2015- 12/31/2020) and **Associate Editor** (2004-4/2015): *Journal of the Atmospheric Sciences* (this is one of the highest quality journals in the discipline of Atmospheric Sciences).

Guest Editor, Special Issue "Analysis of Decadal-Scale Continuous Data Products from Weather Satellite Platforms" in *Remote Sensing*, 2021.

Associate Editor (2/2018-9/1/2020) and **Editorial Board** (5/2015-2/2018), *Remote Sensing of Environment* (this is one of the highest quality journals in the discipline of Remote Sensing)

Section Editorial Board (11/2017-11/2020): *Remote Sensing*

Editorial Board member/Editor (09/2010-2018): *Theoretical and Applied Climatology*

Associate Editor (01/2007-07/2012): *Journal of Applied Meteorology and Climatology*)

Panelist, Program Committee Chair/Membership, Science Team membership

- Co-chair, the 2025 van de Hulst Light-Scattering Awrad selection committee, Elsevier/JQSRT
- Co-chair, the 2025 Michale I Mishchenko Medal selection committee, Elsevier/JQSRT
- NOAA Panel (May-June 2024 with the site visit during 8-9 May 2024) to review the Cooperative Institute for Meteorological Satellite Studies (CIMSS) at the University of Wisconsin-Madison.
- Co-chair (2023-present), IEEE GRSS Modeling in Remote Sensing (MIRS) Technical Committee
- Co-convener, Session 103 "Light Scattering and Radiative Transfer: Basic Research & Applications", American Geophysical Union (AGU) Annual Meeting, December 9-13, 2024, Washington, DC
- Co-organizer/Co-Chair, the *Kuo-Nan Liou Symposium* during the 104th American Meteorological Society (AMS) Annual meeting, January 23, 2024, Baltimore, Maryland
- Session Chair: "Electromagnetic Modeling: Optical radiative transfer", IEEE's International Geoscience and Remote Sensing Symposium (IGARSS), Pasadena, California, July 16-21, 2023.
- **Appointed (**October 2018- June 2022**) one of the 16 members** of the ***National Research***

Council-Space Studies Board's Committee on Earth Science and Applications from Space

- Session Chair: "TH6.V16: Observations and Prediction of Clouds and Precipitation" International Geoscience and Remote Sensing Symposium (IGARSS), Kuala Lumpur, Malaysia, July 17-22, 2022 (virtual).
- Session Co-chair: "Electromagnetic Modeling in Remote Sensing II", IEEE's International Geoscience and Remote Sensing Symposium (IGARSS), Brussels, Belgium, July 12-16, 2021 (virtual)
- Scientific Committee member, IEEE's International Geoscience and Remote Sensing Symposium (IGARSS), Brussels, Belgium, July 12-16, 2021 (virtual)
- Scientific Committee member, IEEE's International Geoscience and Remote Sensing Symposium (IGARSS), Kuala Lumpur, Malaysia, July 17-22, 2022 (Hybrid)
- IEEE panel for evaluating Senior Member Applications, April 17, 2021 (I reviewed 88 application packets)
- Elected member of the *International Radiation Commission* (IRC), the International Association of Meteorology and Atmospheric Sciences (2012-2020)
- Chair of Program Committee, Hyperspectral Imaging and Sounding of Environment, Topical Meeting sponsored by the Optical Society of America (OSA), July 10-14, 2011, Toronto, Canada
- Chair of Program Committee, Hyperspectral Imaging and Sounding of Environment, Topical Meeting sponsored by the Optical Society of America (OSA), April 26-30, 2009, Vancouver, Canada
- Chair of Program Committee, Hyperspectral Imaging and Sounding of Environment, Topical Meeting sponsored by the Optical Society of America (OSA), February 12-15, 2007, Santa Fe, New Mexico
- Chair of Program Committee, Hyperspectral Imaging and Sounding of Environment, Topical Meeting sponsored by the Optical Society of America (OSA) January 31-February 3, 2005, Alexandria, Virginia
- Appointed (2018) one of the 16 members of the *National Research Council-Space Studies Board's Committee on Earth Science and Applications from Space* (October 2018- June 2022)
- One of three co-chairs, Selection Committee for 2023 Poynting Award, Elsevier/JQSRT
- One of three co-chairs, Selection Committee for 2023 Mishchenko Medal, Elsevier/JQSRT
- One of three co-chairs, Selection Committee for the 2022 and 2023 Peter Waterman Award and the Richard Goody Award, Elsevier/JQSRT
- Co-chair, Elsevier/JQSRT Michael I. Mishchenko Medal Selection Committee, 2021.
- Co-chair, Elsevier/JQSRT Waterman and Goody Awards Selection Committee, 2021.
- Elsevier/JQSRT van de Hulst Awards Selection Committee, 2011, 2020.
- Elsevier/JQSRT Waterman and Goody Awards Selection Committee, 2016, 2018, 2020.
- Member of the Selection Committee for the François Arago Award, Advancement of Polarimetric Observations (APOLO), 2019 and 2022
- AGU (American Geophysical Union) College of Fellows Distinguished Lecture Series Committee (2018-2023)
- Panelist, NOAA Proposal Review Panel (virtual), May 5-6, 2025
- Panelist, NASA Proposal Review Panel (virtual), March 28-29, 2023
- Panelist, NASA Proposal Review Panel (virtual), March 9-11, 2021
- Panelist, NASA Proposal Review Panel, September 12-14, 2016, Ashburn, VA

- Panelist, NASA Proposal Review Panel, July 12-14, 2016, Potomac, MD
- Panelist, NASA Proposal Review Panel, October 21-23, 2015, Arlington, VA
- Panelist, NASA Proposal Review Panel, November 14-16, 2011, Bethesda, Maryland.
- Panelist, NASA Proposal Review Panel, March 10-11, 2010, Baltimore, Maryland.
- Panelist, NASA Proposal Review Panel, March 26-28, 2008, Baltimore, Maryland.
- Panelist, NASA Proposal Review Panel, April 11-13, 2006, Greenbelt, Maryland.
- Panelist, NASA Proposal Review Panel, August 6-7, 2003, Washington, D.C.
- Panelist, Proposal Review Panel (virtual), US Department of Energy (DOE) Atmospheric System Research (ASR) Program, May 12, 2020
- Scientific Organizing Committee, Laser-light and Interactions with Particles, August 21-26th, 2022, Warsaw, Poland
- Scientific Organizing Committee, International Radiation Symposium 4-8 July, 2022
- Primary Organizer, The 17th Electromagnetic and Light Scattering Conference ELS-XVI, College Station, TX, March 4-9, 2018 (the effort included receipt of a NASA grant as PI to support 29 early-career researchers to attend the conference)
- Program Committee member, The 16th Electromagnetic and Light Scattering Conference ELS-XVI, College Park, MD, March 19-25, 2017.
- Advisory Committee, The 11th International Conference on laser-light and interactions with particles, Xi'an, China, April 22-26, 2016.
- Scientific Organizing Committee, The 15th Electromagnetic and Light Scattering Conference ELS-XV, Leipzig, Germany, June 21-26, 2015.
- Scientific Organizing Committee, The 14th Electromagnetic and Light Scattering Conference ELS-XIV, Lille, France, June 17-21, 2013.
- Member of Program Committee and session chair, Hyperspectral Imaging and Sounding of Environment, Topical Meeting sponsored by the Optical Society of America (OSA), virtual conference
- Member of Program Committee and session chair, Hyperspectral Imaging and Sounding of Environment, Topical Meeting sponsored by the Optical Society of America (OSA), June 25-27, 2019, San Jose, CA
- Member of Program Committee and session chair, Hyperspectral Imaging and Sounding of Environment, Topical Meeting sponsored by the Optical Society of America (OSA), November 5-8, 2018, Resort World Sentosa, Sentosa Island, Singapore
- American Geophysical Union (AGU) College of Fellows Sub-committee on Distinguished Traveling Lecture Series (8/2017-present)
- Organizing Committee member, International Workshop on Atmospheric Scattering, radiation, and remote sensing, Hangzhou, China, June 26-28, 2017.
- One of co-Chairs (Ping Yang and Steven Miller) of an AMS session: "Satellite-Based Algorithm Developments, Products, Applications and Validations 1: Cloud and Aerosol Properties, Physics and Climatologies", 92nd AMS Annual Meeting, New Orleans, LA, January 22-26, 2012.
- Convener and Chairperson of an AGU session: Light Scattering and Radiative Transfer: Basic Research and Applications, AGU 2006-Fall Meeting, December 11-15, 2006, San Francisco, CA.
- Convener and Chairperson of an AGU session: Light Scattering and Radiative Transfer: Basic Research and Applications, AGU 2007-Fall Meeting, December 10-14, 2007, San Francisco, CA.
- One of two organizers (Ping Yang and Warren J. Wiscombe) of a session entitled "Scattering and Radiative Transfer: Basic Research and Applications" for the Progress in

Electromagnetics Research Symposium (PIERS), August 22-26, 2005, Hangzhou, Zhejiang, China.

- One of two organizers (Ping Yang and Michael I. Mishchenko) of a session entitled "Light Scattering and Radiative Transfer: Theories and Applications" for the Progress in Electromagnetics Research Symposium (PIERS), August 18-21, 2009, Moscow, Russia.
- One of two organizers (Ping Yang and Qiang Fu) of a session entitled "Atmospheric Scattering, Radiative Transfer, and Remote Sensing" for the Progress in Electromagnetics Research Symposium (PIERS), Suzhou, Jiangsu, China, September 12-16, 2011.
- Member of Program (AE101) committee of SPIE's 3rd international Asia-Pacific Symposium on remote sensing of the atmosphere, environment, and space. October 23-27, 2002, Hangzhou, China.
- Member of Program (AM107) committee of SPIE's Atmospheric and Environmental Remote Sensing Data processing and utilization: an end-to-end system perspective, August 2-6, 2004, Denver, Colorado.
- Member of Program (AE101) Committee in SPIE's Remote Sensing of the Atmosphere, Ocean, Environment and Space, November 8-12, 2004, Honolulu, Hawaii.
- Member of the Cirrus Regional Study of Tropical Anvils and Cirrus Layers (CRYSTAL)-Florida Area Cirrus Experiment (FACE) Science Team (2001-2003)
- Member of the NASA MODIS Science Team (2004- 2019)
- Member of the NASA CERES Science Team (2004-present)
- Member, the American Meteorological Society (AMS) Committee on *Cloud Physics* (2007-2012).

Services at Texas A&M University

Department Level:

- Co-Chair, Strategic Plan Committee, Dept. of Atmospheric Sciences, 04/2009
- Chair, Undergraduate Committee, Dept. of Atmospheric Sciences, 2005-2008
- Member, Teaching Committee, Dept. of Atmospheric Sciences, 2006-2008
- Member, Budget Committee, Dept. of Atmospheric Sciences, 2005
- Member, Graduate Committee, Dept. of Atmospheric Sciences, 2001-2005; 2008-present
- Departmental Seminar coordinator, Spring, 2003 and Fall, 2005
- Co-chair, Faculty Search Committee, Dept. of Atmospheric Sciences, 2004

College Level:

- Member, the Selection Committee for the 2005 Dean's Distinguished Achievement Awards, College of Geosciences, 2005
- Member, Curriculum Committee, College of Geosciences, 2005-2007
- Member, Grievance Committee, College of Geosciences, 2008-2012
- Member, Endowed Positions Committee, College of Arts & Sciences (2022-present)
- Member, University Distinguished Professor Candidate Selection Committee (2024-present)

University Level:

- Member, the Association of Former Students Awards Selection Committee, 2010

- Member, Dean of Faculties Operations Council, 2019-2021
- Member, University Research Council, 2019-8/2024 (resigned due to my health condition)
- Member, International Program Committee, 2019-present
- Member, Executive Advisory Committee on Core Facilities, 2019-2023
- Member, University Distinguished Professor Selection Committee (two terms: 2023 & 2024
- One of two Member Representatives from TAMU to the University Corporation for Atmospheric Research (UCAR) (2012-2018; 2024-present)

External Review/Evaluation Services

- Reviewer for:

  Bulletin of the American Meteorological Society, J. Atmos. Sci., J. Appl. Meteor. Clim., J. Climate, Atmos. Chem. Phys., J. Geophys. Res., Reviews of Geophysics, Geophy. Res. Lett., Applied Optics, J. Opt. Soc. Amer. A, Optics Letter, Optics Express, Optical Engineering, J. Quant. Spectrosc. Radiat. Transfer, IEEE Trans. Geosci. Remote Sens., IEEE Geosci. Remote Sensing Letter, Medical Physics, Quart. J. Roy. Meteorol. Soc., Appl. Spectrospcopy, J. Electromagnetic Waves and Applications, J. Aerosol Science, Central European Journal of Physics, Advances in Atmospheric Sciences, Aerosol Science & Technology, Nature Communications, Scientific Reports, Science

- Reviewer of numerous proposals for

  NSF, NASA, DOE, Research Corporation for Science Advancement, Natural Environmental Research Council (United Kingdom), The Research Council of Norway, The Austrian Science Fund (FWF), Swiss National Science Foundation, Israel Science Foundation, Italian Antarctic Committee
- External evaluation of numerous tenure/promotion dossiers for multiple universities
- External evaluator for a promotion dossier for *NCAR Scientist III*
- External evaluator of two promotion dossiers for the Department of Applied Physics and Applied Mathematics, Columbia University
- External evaluator for a promotion dossier for *GS-15,* NASA Goddard Space Flight Center
- External evaluator of a promotion dossier for the Department of Atmospheric Sciences, University of Arizona.
- External evaluator of two promotion dossiers for the Goddard Earth Sciences and Technology Center, University of Maryland, Baltimore County.
- External evaluator of a faculty tenure & promotion dossiers for the National Central University, Taiwan.
- External evaluator of a promotion dossier for the Department of Atmospheric Sciences, University of Illinois at Urbana-Champaign.
- External evaluator of a tenure & promotion dossier for the Department of Atmospheric, Oceanic, and Space Science, University of Michigan.
- External evaluator of a tenure & promotion dossier for the Department of Earth & Atmospheric Sciences, University of Nebraska – Lincoln

- External evaluator of a promotion dossier for the Department of Mechanical Engineering, Auburn University
- External evaluator of a tenure & promotion dossier for the Department of Earth & Atmospheric Sciences, The City College of New York
- External evaluator of a tenure & promotion dossier for the Department of Mechanical Engineering, The City College of New York
- External evaluator of a tenure & promotion dossier for the Department of Physics and Astronomy, Mississippi State University
- External evaluator of a promotion dossier for Earth System Science Interdisciplinary Center/University of Maryland-College Park (ESSIC/UMD)

Graduate Student Theses and Dissertations Supervised

Ph.D. Dissertations supervised/co-supervised by Dr. Ping Yang

1. Yong-Keun Lee, Ph.D. dissertation entitled "Study of Cloud Properties from Single-Scattering, Radiative Forcing, and Retrieval Perspectives"; Dissertation defense: May 24, 2006; supervised by Ping Yang.
2. Peng-Wang Zhai, Ph.D. dissertation entitled "A Forth-Order Symplectic FDTD Method for Light Scattering and A 3D Monte Carlo Code for Radiative Transfer in Scattering Systems"; Dissertation defense: May 16, 2006; co-supervised by George Kattawar and Ping Yang.
3. Joonsuk Lee, Ph.D. dissertation entitled "Analyses based on the MODIS, CERES, and AIRS measurements"; Dissertation defense: May 29, 2007; co-supervised by Ping Yang and Andrew Dessler.
4. Kerry Meyer, Ph.D. dissertation entitled "Global ice cloud observations: radiative properties and statistics from Moderate-resolution Imaging Spectroradiometric Measurements"; Dissertation defense: May 31, 2007; supervised by Ping Yang.
5. Guang Chen, Ph.D. dissertation entitled "Modeling of the optical properties of nonspherical particles in the atmosphere"; Dissertation defense: June 4, 2007; supervised by Ping Yang.
6. Zhibo Zhang, Ph.D. dissertation entitled "Satellite-based remote sensing of cirrus clouds: Hyperspectral radiative transfer modeling, analysis of uncertainties in in-situ cloud extinction measurements and intercomparison of cirrus retrievals from A-train instruments"; Dissertation defense: April 24, 2008; supervised by Ping Yang.
7. Yu You, Ph.D. dissertation entitled "Applications of the generalized DDA formalism and the nature of polarized light in deep oceans"; Dissertation defense: April 27, 2008; co-supervised by George Kattawar and Ping Yang.
8. Qian Feng, Ph.D. dissertation entitled "Sensitivity study of the effects of mineral dust particle nonsphericity and thin cirrus clouds on MODIS dust optical depth retrievals and direct radiative forcing calculations" Dissertation defense: May 7, 2010; supervised by Ping Yang.

9. Yu Xie, Ph.D. dissertation entitled “Study ice cloud properties from synergetic use of satellite observations and modeling capabilities” Dissertation defense: September 17, 2010; supervised by Ping Yang
10. Lei Bi, Ph.D. dissertation entitled “Light scattering by ice crystals and mineral dust aerosols in the atmosphere” Dissertation defense: September 17, 2010; co-supervised by George Kattawar and Ping Yang
11. Hyoun-Myoung Cho, Ph.D. dissertation entitled “Studying Clouds and aerosols with lidar depolarization ratio and backscatter relationships” Dissertation defense: July 21, 2011; co-supervised by Ping Yang and Shaima Nasiri
12. Yue Li, Ph.D. dissertation entitled “Investigation of the dynamical, macrophysical and radiative properties of high clouds combining satellite observations and climate model simulation” Dissertation defense: October 12, 2011; co-supervised by Ping Yang and Gerald North
13. Chenxi Wang, Ph.D. dissertation entitled “Investigation of thin cirrus cloud optical and microphysical properties on the basis of satellite observations and fast RTMs”. Dissertation defense: May 21, 2013; supervised by Ping Yang
14. Bingqi Yi, Ph.D. dissertation entitled “Radiative effects of aerosols, natural cirrus clouds and contrails: broadband optical properties and sensitivity studies’. Dissertation defense: May 17, 2013; co-supervised by Ping Yang and Kenneth Bowman
15. Chao Liu, Ph.D. dissertation entitled “Numerical investigation of light scattering by atmospheric particles”. Dissertation defense: May 31, 2013; Co-supervised by R.-Lee Panetta and Ping Yang
16. Xin Huang, Ph.D. dissertation entitled “Retrieval of non-spherical dust aerosol properties from satellite observations”. Dissertation defense: June 7, 2013; Co-supervised by George W. Kattawar and Ping Yang
17. Benjamin H. Cole, Ph.D. dissertation entitled “Global distribution of ice cloud particle shape and roughness from PARASOL satellite measurements”. Dissertation defense: May 31, 2013; supervised by Ping Yang
18. Chen Zhou, Ph.D. dissertation entitled “Attribution analysis of cloud feedback”. Dissertation defense: June 11, 2014, supervised by Andrew Dessler and Ping Yang
19. 18. Bingqiang Sun, Ph.D. dissertation entitled “Simulation and application of light scattering properties for scatterers with large aspect ratios”. Dissertation defense: October 8, 2014; supervised by George Kattawar and Ping Yang
20. Jianing Zhang, Ph.D. dissertation entitled “Scattering and radiation computation with spectral methods”. Dissertation defense: June 16, 2016; supervised by Ping Yang and R. Lee Panetta
21. Yifeng Ding, Ph. Dissertation entitled “Satellite-based cloud remote sensing: fast radiative transfer modeling and inter-comarison of single-/multi-layer cloud retrievals with VIIRS”. Dissertation defense: May 31, 2017; supervised by Ping Yang
22. Guanglang Xu, Ph.D. dissertation entitled “A numerical study on the light scattering properties of some atmospheric and oceanic components” Dissertation defense: October 16, 2017; supervised by Ping Yang and Sarah Brooks

23. Kuo, C.-P., Ph.D. dissertation entitled “Impacts of neglecting longwave scattering and the methods of reducing these uncertainties in model simulations containing clouds”, Dissertation defense: May 7, 2018; supervised by Ping Yang
24. Hioki, S., Ph.D. dissertation entitled “Characterizing ice cloud particle shape and surface roughness from polarimetric satellite observations”, Dissertation defense: May 10, 2018; supervised by Ping Yang
25. Jiachen Ding, Ph.D. dissertation entitled “A fast vector radiative transfer model for polarimetric remote sensing” March 1, 2019; supervised by Ping Yang and Andrew Dessler
26. Siyao Zhai, Ph.D. dissertation entitled “The convergence properties and applications of the invariant imbedding T-matrix and Pseudo-spectral time domain methods” May 1, 2019; supervised by R. Lee Panetta and Ping Yang
27. Boyan Gu, Ph.D. dissertation entitled “Evaluations and improvements of the RRTMG and Fu-Liou Radiative Transfer model simulations of clouds ”, dissertation defense: October 10, 2019; supervised by P. Yang and K. Bowman
28. Yi Wang, Ph.D. dissertation entitled “Development of optimal ice cloud optical property models for remote sensing applications”, dissertation defense: October 7, 2020; supervised by P. Yang
29. Adam Bell, Ph.D. dissertation entitled “Inferring ice cloud properties from polarized sub-millimeter microwave and infrared spaceborne observations”, dissertation defense: December 3, 2020; supervised by P. Yang
30. Jeffrey Mast, Ph.D. dissertation entitled “Toward hyperspectral remote sensing of cirrus clouds and aerosol mineral dust”, dissertation defense: June 2, 2023; supervised by P. Yang and A. Dessler
31. Jian Wei, Ph.D. dissertation entitled “Improving ocean surface albedo parameterization and evaluating its response to artic surface temperature and zonal-mean tropical atmospheric circulation in CESM2”, dissertation defense: October 4, 2023; supervised by S. DiMarco and P. Yang
32. Nancy Okeudo, Ph.D. dissertation entitled “A study of the optical properties of nonspherical particles with the physical geometric optics method”, dissertation defense: October 16, 2023; supervised by P. Yang and R. Saravanan
33. Yuheng Zhang, Ph.D. dissertation entitled “The convergence and consistency of light scattering methods and applications in dust optics and oceanic particle modeling”, dissertation defense: October 4, 2024; supervised by P. Yang
34. Dongchen Li, Ph.D. dissertation entitled “Active-passive remote sensing of ice clouds and dust aerosols”, dissertation defense: March 7, 2025; supervised by P. Yang

Master’s Degree Theses:

1. Kerry Meyer, M.S. Thesis entitled “The Study of Cirrus Clouds Using Airborne and Satellite Data”; Thesis defense: March 9, 2004; supervised by Ping Yang.
2. Zhibo Zhang, M.S. Thesis entitled “Computation of the Scattering Properties of Nonspherical Crystals”; Thesis defense: June 4, 2004; supervised by Ping Yang.

3. Jacqueline Kinney, M.S. Thesis entitled “Retrieval of Optical and Microphyiscal Properties of Ice Clouds Using Atmospheric Radiation Measurement (ARM) Data”; Thesis defense: June 14, 2005; supervised by Ping Yang.
4. Ryan Lawless, M.S. Thesis entitled “Sensitivity of the Mueller Matrix to the Optical and Microphysical Properties of Cirrus Clouds”; Thesis defense: June 15, 2005; supervised by Ping Yang.
5. Christopher Yost, M.S. Thesis entitled “Use of AIRS and MODIS Thermal Infrared Channels to Retrieve Ice Cloud Properties”; Thesis defense: September 29, 2006; supervised by Ping Yang.
6. Yu Xie, M.S. Thesis entitled “The Effect of Ice Crystal Surface Roughness on the Retrieval of Ice Cloud Microphysical and Optical Properties”; Thesis defense: March 5, 2007; supervised by Ping Yang.
7. Kevin Garrett, M.S. Thesis entitled “Hyperspectral and narrowband remote sensing of cirrus clouds using infrared spectral data”; Thesis defense: June 1, 2007; supervised by Ping Yang.
8. Feng Zhang, M.S. Thesis entitled “Scattering properties of oriented hexagonal ice crystals”; Thesis defense: May 5, 2009; supervised by Ping Yang.
9. Jianxu Lu, M.S. Thesis entitled “Simulation of lidar return signals associated with water clouds”; Thesis defense: June 5, 2009; co-supervised by Ping Yang and Sarah Brooks.
10. Guanglin Tang, M.S. Thesis entitled “Application of the discontinuous Galerkin time domain method to the simulation of the optical properties of dielectric particles”; Thesis defense: March, 2010; co-supervised by R. Lee Panetta and Ping Yang.
11. Kai Lu, M.S. Thesis entitled “Simulation of the extinction efficiency, the absorption efficiency, and the asymmetry factor of ice crystals and relevant applications to the study of cirrus cloud radiative properties”; Thesis defense: May 7, 2010; supervised by Ping Yang.
12. Zhaokai Meng, Thesis entitled “Light Scattering Problem and its Application in Atmospheric Science”. Thesis defense: October 11, 2010; co-supervised by George Kattawar and Ping Yang.
13. Benjamin Cole, Thesis entitled “On the Microphysical Properties of Ice Clouds as Inferred from the Polarization of Electromagnetic Waves”. Thesis defense: June 10, 2011; supervised by Ping Yang.
14. Elizabeth Baugher, Thesis entitled “Comparison between model simulations and measurements of hyperspectral far-infrraed radiation from FIRST during the RHUBC-II campaign” Thesis defense: October 6, 2011; co-supervised by Ping Yang and Kenneth Bowman.
15. Guangyang Fang, Thesis entitled “Optical properties of Sahara and Asian dust: application to radiative transfer simulations”. Thesis defense: March 7, 2012; supervised by Ping Yang
16. Derek I. Podowitz, Thesis entitled “Comparison between pseudo-spectral time domain and discrete dipole approximation simulations for single-scattering properties of particles” Thesis defense: June 6, 2013; supervised by Ping Yang.

17. Jianing Zhang, Thesis entitled "An investigation of light scattering by irregular ice crystal via PSTD". Thesis defense: June 10, 2014; supervised by R. Lee Panetta and Ping Yang
18. William L. Henning, Thesis entitled "Rigorous testing of the Rapid Radiative Transfer Model across the infrared spectrum". Thesis defense: March 7, 2016; supervised by Ping Yang.
19. Rebecca L. Evrard, Thesis entitled "A validation of the VIIRS fast radiative transfer model via brightness temperature analysis in longwave infrared channels". Thesis defense: June 15, 2016; supervised by Ping Yang and Kenneth Bowman
20. James J. Coy Jr., Thesis entitled "evaluating the benefits of using longwave infrared and millimeter/sub-millimeter bands to explore ice cloud characteristics through polarized vector radiative transfer simulations" ". Thesis defense: March 5, 2019; supervised by Ping Yang and R. Saravanan

Current Graduate Students (chair or co-chair of the thesis committee)

James Coy	Ph.D.	in progress
Emmanuel Ibekwe	Ph.D.	in progress
Sihang Wang	Ph.D.	in progress

New gradute students who will start in the 2025 Fall semester:
Jayce Crayne
Neil Cutting
Dakota Wiley

Current Research Staff (support and supervisory role)

Dr. Steven Schroeder, Postdoctoral Research Associate, Dept of Atmospheric Sci., (2016-present)

Dr. Tong Ren, Assistant Research Scientist, Dept of Atmospheric Sci. (2018-present)

Dr. Jiachen Ding, Assistant Research Scientist, Dept of Atmospheric Sci. (2019-present)

Dr. Jian Wei, Postdoctoral Research Associate, Dept of Atmospheric Sci (1/2024-present)

New postdoctoral Research Associate who will start in the 2025 Summer semester:
Dr. Dongchen Li

Courses Taught (some courses were taught multiple times)

METR-335 (Atmospheric Thermodynamics)
ATMO-441 Satellite Meteorology and Remote Sensing
ATMO-446 (Physical Meteorology)
ATMO-612 (Atmospheric Physics II)
ATMO-655 (Satellite Data in Meteorology)
ATMO-689 (Special Topic on Light Scattering)
ATMO-689 (Special Topic on Advanced Radiative Transfer Theory)
ATMO-689 (Special Topic on Single- and Multiple-Scattering of Light in the Atmosphere)

Funded Research Projects

Eight-four (87) Funded Projects: (81 completed projects and 6 current projects)

Completed Projects

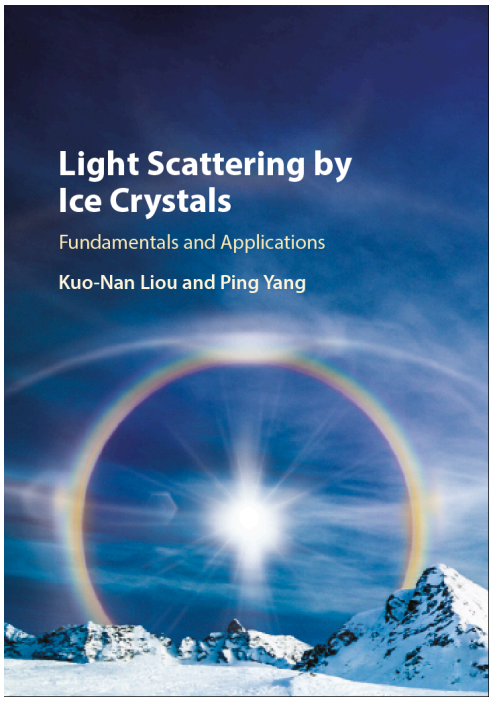
Funding Source	Number of Grants/Contracts
National Science Foundation (NSF)	7
U.S. Department of Energy (DOE)	3
U.S. Department of Transportation (DOT)	2
Office of Naval Research	2
National Oceanic and Atmospheric Administration (NOAA)	17
National Aeronautics and Space Administration (NASA)	50

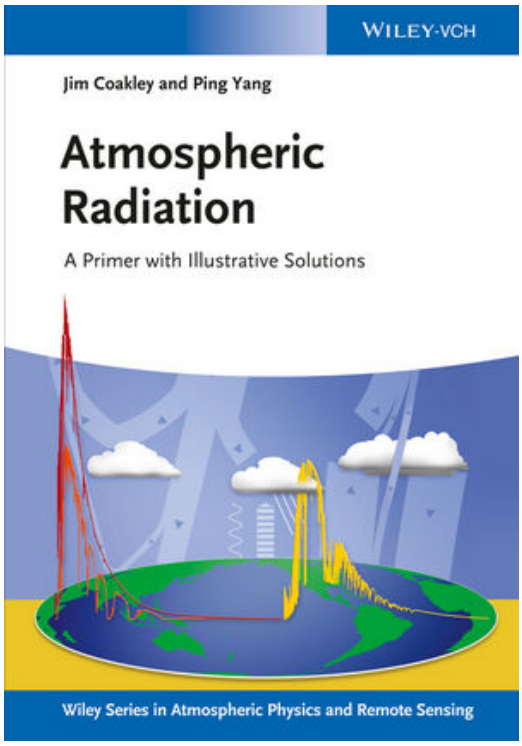
Current Projects

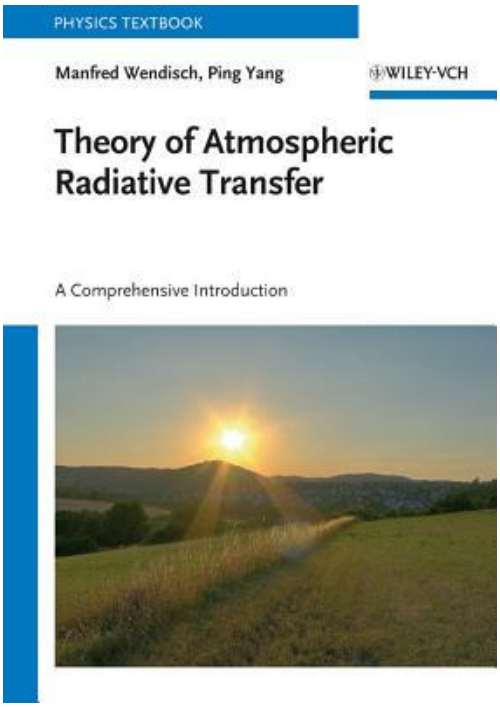
Funding Source	Number of Grants/Contracts
National Science Foundation (NSF)	1
National Aeronautics and Space Administration (NASA)	3
TAMU projects	2

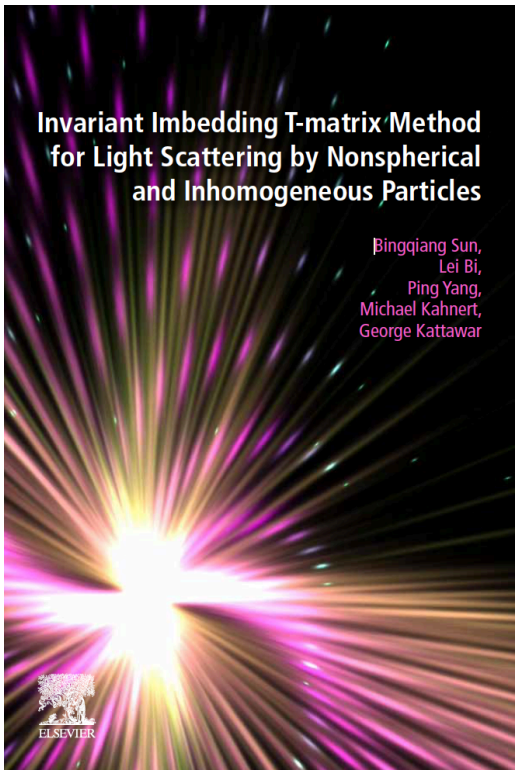
Ping Yang's Publications

Invited book chapters:	**13**
Book Review:	**1**
Books:	**4 (in print) + 2 (in preparation)**
Publications (in print) in peer-reviewed journals:	**383**

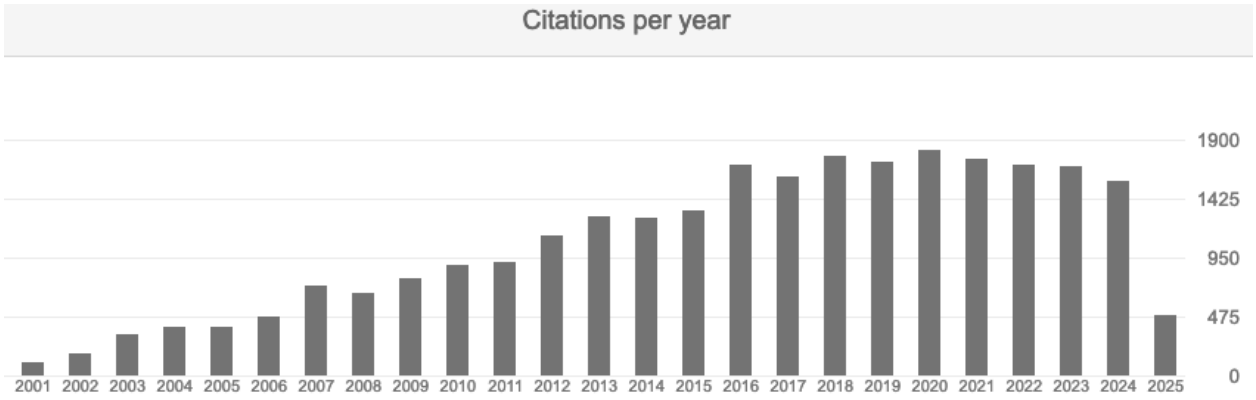




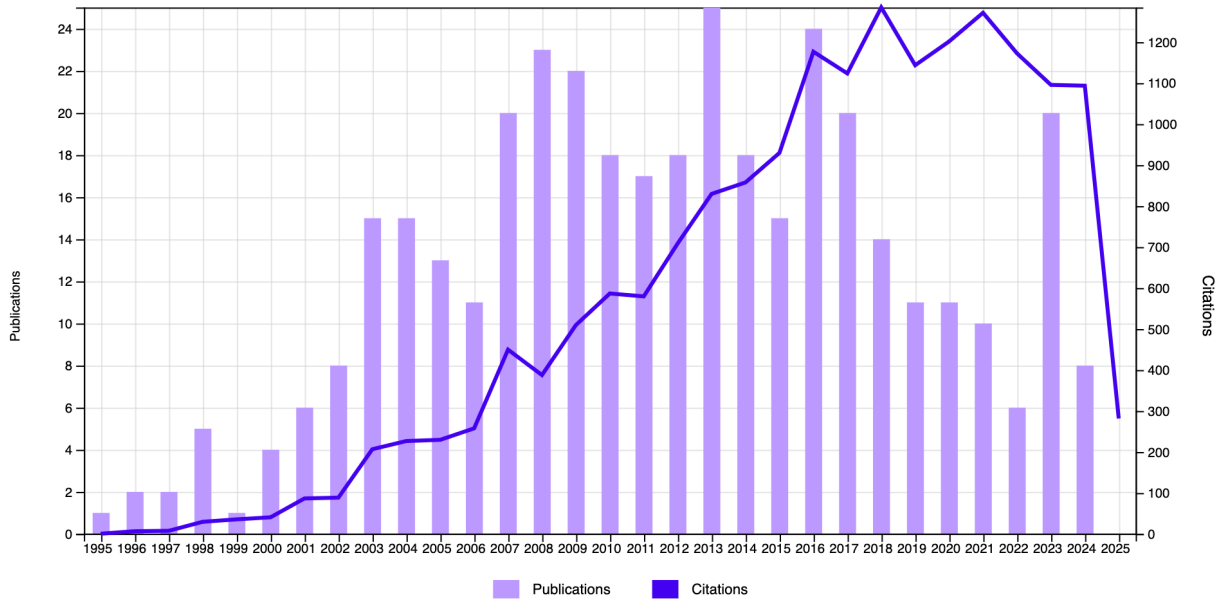




Citation statistics from ***Google Scholar***)
(Google Scholar Profile: https://scholar.google.com/citations?user=0hTZUnYAAAAJ&hl=en)
Total times cited in the literature (as of 05/1/2025): **27,264**
H-index: **84**



Citation statistics from the ***Web of Science***: (ResearcherID: B-4590-2011)
Total times cited in the literature (as of 05/1/2025): **17,881**
H-index: **67**



Referred Journal Publications per Year (papers in print)

2025	1
2024	8
2023	20 (plus 2 book chapters)
2022	6
2021	10
2020	11
2019	11 (plus a book)
2018	14
2017	20
2016	23 (plus a book and a book chapter)
2015	15
2014	18 (plus a book)
2013	25 (plus 2 book-chapters)
2012	19 (plus a book)
2011	17
2010	17
2009	22
2008	23 (plus 1 book-chapter)
2007	19 (plus 1 book-chapter)
2006	11 (plus 1 book-chapter)
2005	13
2004	14
2003	15
2002	8 (plus 1 book-chapter)
2001	6 (plus 1 book-chapter)
2000	4 (plus 2 book-chapters)
1999	2
1998	6
1997	2
1996	2
1995	1

Peer-reviewed Publications per Journal (papers in print)

Journal of Quantitative Spectroscopy & Radiative Transfer	89
Journal of Geophysical Research-Atmospheres	50
Journal of Applied Meteorology/Journal of Applied Meteorology and Climatology	30
Optics Express	28

Applied Optics	26
IEEE Transaction on Geoscience and Remote Sensing	22
Geophysical Research Letters	21
Journal of the Atmospheric Sciences	18
Atmospheric Chemistry and Physics	12
Journal of Climate	8
IEEE Geoscience and Remote Sensing Letters	7
Remote Sensing	7
Journal of Aerosol Science	5
Journal of Atmospheric and Oceanic Technology	5
Atmospheric Measurement Techniques	4
Journal of the Optical Society of America A	4
Journal of Advances in Modeling Earth Systems	5
Atmospheric Research	3
Journal of Applied Remote Sensing	3
Journal of Biomedical Optics	2
Contribution to Atmospheric Physics	2
Aerosol Science and Technology	2
Optical Letters	2
Bulletin of the American Meteorological Society	3
Journal of Geophysical Research-Oceans	1
Journal of Computational Physics	1
Journal of Optics A: Pure and Applied Optics	1
Physics in Medicine and Biology	1
Journal of Electromagnetic Waves and Applications	1
Monthly Weather Review	2
Remote Sensing of Environment	1
Climate Dynamics	1
International Journal of Remote Sensing	1
Atmospheric Environment	1
Journal of American Statistical Association	1
Advances in Atmospheric Science	1
Journal of the Meteorological Society of Japan	1
Atmosphere	1
Applied Sciences	1
Planetary and Space Sciences	1
Physics Reports	1
Physical Review A	1
Earth and Space Science	1
Progress In Electromagnetics Research	1
Texas J. of Sci.	1
The Astrophysical Journal	1
The Astrophysical Journal Letters	1

Books (in print)

[Book -- 1]:

Wendisch, M., and **P. Yang**, 2012: Theory of Atmospheric Radiative Transfer – A Comprehensive Introduction, Wiley-VCH, Weinheim, Germany, ISBN, 978-527-40836-8, 321pp.

[Book -- 2]:

Coakley, J., and **P. Yang**, 2014: Atmospheric Radiation -- A Primer with Illustrative Solutions. Wiley-VCH, Weinheim, Germany, ISBN 978-3-527-41098-9, 239 pp.

[Book -- 3]:

Liou, K. N., and **P. Yang**, 2016: Light Scattering by Ice Crystals: Fundamentals and Applications, Cambridge University Press, ISBN 9780521889162, 443 pp.

[Book -- 4]:

Sun, B., L. Bi, **P. Yang**, M. Kahnert, and G. Kattawar, 2019: Invariant Imbedding T-matrix Method for Light Scattering by Nonspherical and Inhomogeneous Particles, Elsevier, ISBN 978-0-12818090-7, 262 pp.

Books (in preparation)

[Book -- 5]:

Yang, P., J. Ding, M. Saito, G. W. Kattawar: "Physical-Geometric Optics for Light Scattering by Nonspherical Particles: Applications to Remote Sensing and Climate Science" to be published by *Cambridge University Press* (submitted).

[Book -- 6]:

Zhang, Z., F. Xu, and P. Yang: "Polarimetric Remote Sensing of Cloud and Aerosol Properties" to be published by *Cambridge University Press* (in preparation).

Book Chapters

[Book Chapter -- 1]:

Yang, P., and K. N. Liou, 2000: Finite difference time domain method for light scattering by nonspherical particles. Chapter 7 in ***Light scattering by nonspherical particles: theory, measurements, and geophysical applications***, Eds. M. I. Mishchenko, J. W. Hovenier, and L. D. Travis, Academic Press, pp.173-221.

[Book Chapter -- 2]:

Liou, K. N., Y. Takano, and **P. Yang**, 2000: Light scattering and radiative transfer by ice crystal clouds: Applications to climate research. Chapter 15 in ***Light scattering by nonspherical particles: theory, measurements, and geophysical applications***, Eds., M. I. Mishchenko, J. W. Hovenier, and L. D. Travis, Academic Press, pp.417-449.

[Book-chapter --3]:

Liou, K. N., Y. Takano, **P. Yang**, and Y. Gu, 2001: Radiative transfer in cirrus clouds: Light scattering and spectral information, in ***Cirrus***, Eds. D. Lynch, K. Sassen, D. O. Starr, and G. Stephens. Oxford University Press, New York, pp. 265-296

[Book Chapter -- 4]:

Yang, P. and B. A. Baum, 2002: Satellite remote sensing of cloud properties, in ***Encyclopedia of Atmospheric Sciences***, Eds. J. Holton, J. A. Curry, and J. Pyle, Academic Press, pp. 1955-1965.

[Book Chapter -- 5]:

Yang, P. and K. N. Liou, 2006: Light Scattering and Absorption by Nonspherical Ice Crystals, in ***Light Scattering Reviews: Single and Multiple Light Scattering,*** Ed. A. Kokhanovsky, Springer-Praxis Publishing, Chichester, UK, 31-71.

[Book Chapter -- 6]:

Lu, J. Q., R. S. Brock, **P. Yang**, and X.-H. Hu, 2007: Modeling of Light Scattering by Single Red Blood Cells With the FDTD Method, invited chapter in ***Optics of Biological Particles***, eds. A Hoekstra, G. Videen, and V. Maltsev, 212-241, 2007, Springer.

[Book Chapter -- 7]:

Liou, K. N., Y. Gu, W. Lee, Y. Chen, and **P. Yang**, 2008: Some unsolved problems in atmospheric radiative transfer: Implication on climate research in the Asia-Pacific Region. In "***Recent Progress in Atmospheric Sciences: Applications to the Asia-Pacific region***", World Scientific Publishing Co., Singapore, Chapter 5.

[Book Chapter -- 8]:

Bi, L., and **P. Yang**, 2013: Physical-geometric optics hybrid methods for computing the scattering and absorption properties of ice crystals and dust aerosols, in ***Light Scattering Reviews 8,*** Ed. A. Kokhanovsky, Springer-Praxis Publishing, Chichester, UK, 69-114.

[Book Chapter -- 9]:

Panetta, R. L., C. Liu, and **P. Yang**, 2013: A pseudo-spectral time domain method for light scattering computation, in ***Light Scattering Reviews 8,*** Ed. A. Kokhanovsky, Springer-Praxis Publishing, Chichester, UK, 139-187.

[Book Chapter -- 10]:

Yang, P. and B. A. Baum, 2015. Remote Sensing: Cloud Properties, in ***Encyclopedia of Atmospheric Sciences*** (2nd edition), G. R. North (editor-in-chief), J. Pyle and F. Zhang (editors), Vol. 5, pp. 116-127. Academic Press, ISBN: 9780123822253.

[Book Chapter -- 11]:

Kattawar, G. W., **P. Yang**, Y. You, L. Bi, Y. Xie, X. Huang, and S. Hioki, 2016. Polarization of light in the atmosphere and ocean, in ***Light Scattering Reviews 10,*** Ed. A. Kokhanovsky, Springer-Praxis Publishing, Chichester, UK, 3-33.

[Book Chapter -- 12]:

Yang, P., J. Ding, G. W. Kattawar, 2023: Maxwell's equations for single-scattering particles, in ***Light, Plasmonics and Particles***, Ed. M P. Mengüç, and M. Francoeur, Elsevier, Amsterdam, Netherlands, 21-42.

[Book Chapter -- 13]:

Yang, P., J. Ding, G. W. Kattawar, 2023: Applications of Maxwell's equations to light scattering by dielectric particles, in ***Light, Plasmonics and Particles***, Ed. M P. Mengüç, and M. Francoeur, Elsevier, Amsterdam, Netherlands, 133-147.

Research White Paper

Yang, P., A. Dessler, G. Hong, 2008: Aviation-Climate Change Research Initiative (ACCRI) Subject Specific White Paper (SSWP) VI: Contrails/cirrus optics and radiation, pp. 57, (**solicited and funded** by DOT/FAA).

Book Review & Tribute

Yang, P., 2008: *Cloud Optics* by A. A. Kokhanovsky, *Bulletin of the American Meteorological Society (BAMS)*, Vol. 89, P. 1924.

Yang, P., B. Cairns, A. Marshak, O. Dubovik, L. Kolokolova, A. Lacis, and L. Travis, 2020: A tribute to Dr. Michael Mishchenko, *BAMS*, Vol. 101, P. 913-915.

Yang, P., Y. Gu, and Q. Fu, 2021: A tribute to Dr. Kuo-Nan Liou, BAMS, Vol. 102, P. 778-782.

Peer-Reviewed Journal Papers (total: 383 in print)

(* and ^ indicate my graduate students and postdocs, respectively, when the work was performed)

[1] **Yang, P.**, and K. N. Liou, 1995: Light scattering by hexagonal ice crystals: comparison of finite-difference time domain and geometric optics models, *J. Opt. Soc. Amer. A,* 12, 162-176.

[2] **Yang, P.**, and K. N. Liou, 1996: Finite-difference time domain method for light scattering by small ice crystals in three-dimensional space, *J. Opt. Soc. Amer.,* A13, 2072-2085

[3] **Yang, P.**, and K. N. Liou, 1996: Geometric-Optics-integral-equation method for light scattering by nonspherical ice crystals, *Appl. Opt.*, 35, 6568-6584

[4] **Yang, P.**, and K. N. Liou, 1997: Light scattering by hexagonal ice crystals: Solution by a ray-by-ray integration algorithm, *J. Opt. Soc. Amer. A.* , 14, 2278-2289.

[5] **Yang, P.**, K. N. Liou, and W. P. Arnott, 1997: Extinction efficiency and single-scattering albedo for laboratory and natural cirrus clouds, *J. Geophys. Res*., 102, 21,825-21,835.

[6] **Yang, P.**, and K. N. Liou, 1998: Single-scattering properties of complex ice crystals in terrestrial atmosphere, *Contr. Atmos. Phys.*, 71, 223-248.

[7] **Yang, P.**, and K. N. Liou, 1998: An efficient algorithm for truncating spatial domain in modeling light scattering by finite-difference technique, *J. Comput. Phys.*, 140, 346-369.

[8] Liou, K. N., **P. Yang**, Y. Takano, T. Charlock, W. P. Arnott, 1998: On the radiative properties of contrail cirrus, *Geophys. Res. Letter*, 25, 1161-1164.

[9] Ou, S., K. N. Liou, **P. Yang**, P. Rolland, T. R. Caudill, J. Lisowski, and B. Morrison, 1998: Airborne retrieval of cirrus cloud optical and microphysical properties using airborne remote Earth Sensing System 5.1-5.3μm and 3.7 μm channel data, *J. Geophys. Res*., 103, 23,231-23,242.

[10] Fu, Q., **P. Yang**, and W. B. Sun, 1998: An accurate parameterization of the infrared radiative properties of cirrus clouds for climate models, *J. of Climate*., 25, 2223-2237.

[11] Wyser, K., and **P. Yang**, 1998: Average ice crystal size and bulk shortwave single scattering properties of cirrus clouds, *Atmos. Res*., 49, 315-335.

[12] Fu, Q., W. B. Sun, and **P. Yang**, 1999: On modeling of scattering and absorption by nonspherical cirrus ice particles at thermal infrared wavelengths*, J. Atmos. Sci*. 56, 2937-2947.

[13] Wyser, K., and **P. Yang**, 1999: On the uncertainties in refractive index of ice, *Contr. Atmos. Phys.,* 72, 351-354.

[14] **Yang, P.**, K. N. Liou, K. Wyser, and D. Mitchell, 2000: Parameterization of the scattering and absorption properties of individual ice crystals, *J. Geophys. Res*., 105, 4699-4718.

[15] Baum, B. A., D. P. Kratz, **P. Yang**, S.C. Ou, Y. Hu, P. Soulen, and S. C. Tsay, 2000: Remote sensing of cloud properties using MODIS airborne simulator imagery during SUCCESS. I. Data and Models. *J. Geophys. Res.*, 105, 11,767-11,780.

[16] Baum, B. A., P. Soulen ,K.I. Strabala, M. I. King, S. A. Ackerman, W. P. Menzel, and **P. Yang**, 2000: Remote sensing of cloud properties using MODIS airborne simulator imagery during SUCCESS. II. Cloud Thermodynamic Phase. *J. Geophys. Res.*, 11,781-11,792.

[17] **Yang, P.**, K. N. Liou, M. I. Mishchenko, and B.-C. Gao, 2000: Efficient finite-difference time domain scheme for light scattering by dielectric particles: application to aerosols, *Appl. Opt*., 39, 3727-3737.

[18] **Yang, P.**, B.-C. Gao, B. A. Baum, W. Wiscombe, M. I. Mischenko, D. M. Winker, and S. L. Nasiri, 2001: Asymptotic solutions of optical properties of large particles with strong absorption. *Appl. Opt.,* 40, 1532-1547.

[19] **Yang, P.**, B.-C. Gao, B. A. Baum, Y. X. Hu, W. J. Wiscombe, S.-C. Tsay, and D. M. Winker, S. Nasiri, 2001: Radiative properties of cirrus clouds in the infrared spectral region(8-13 microns). *J. Quant. Spectros. Rad. Transfer*, 70, 473-504.

[20] Hu, Y., D. Winker, **P. Yang**, B. A. Baum, L. Poole, and L. Vann, 2001: Identification of cloud phase from PICASSO-CENA lidar depolarization: A multiple scattering sensitivity study. *J. Quant. Spectros. Rad. Transfer*, 70, 569-579.

[21] **Yang, P.**, B.-C. Gao, B. A. Baum, W. Wiscombe, Y. Hu, S. L. Nasiri, A. Heymsfield, G. McFarquhar, and L. Miloshevich, 2001: Sensitivity of cirrus bidirectional reflectance to vertical inhomogeneity of ice crystal habits and size distributions for two Moderate-Resolution Imaging Spectrometer (MODIS) bands. *J. Geophys. Res*., 106, 17267-17291.

[22] Baran, A. J., **P. Yang**, and S. Havemann, 2001: Calculation of the single-scattering properties of randomly oriented hexagonal ice columns: a comparison of the T-matrix and the finite-difference time-domain methods, *Appl. Opt*., 40, 4376-4386.

[23] Baran, A. J., P. N. Francis, S. Havemann, and **P. Yang**, 2001: A study of the absorption and extinction properties of hexagonal ice columns and plates in random and preferred orientation, using excat T-matrix theory and aircraft observations of cirrus, *J. Quant. Spectrosc. Radiat. Transfer*, 70, 505-518.

[24] Nasiri, S. L., B. A. Baum, A. J. Heymsfield, **P. Yang**, M. Poellot, D. P. Kratz, and Y. Hu, 2002: Development of midlatitude cirrus models for MODIS using FIRE-I, FIRE-II, and ARM in-situ data. *J. Appl. Meteor*., 41, 197-217.

[25] **Yang, P.**, B.-C. Gao, W. Wiscombe, M. I. Mishchenko, S. Platnick, H.-L. Huang, B. A. Baum, Y. X. Hu, D. Winker, S.-C. Tsay, and S. K. Park, 2002: Inherent and apparent scattering properties of coated or uncoated spheres embedded in an absorbing host medium. *Appl. Opt.* 41, 2740-2759.

[26] Dubovik, O., B. N. Hilben, T. Lapyonok, A. Sinyuk, M. I. Mishchenko, **P. Yang**, and I. Slutsker, 2002: Non-spherical aerosols retrieval method employing light scattering by spheroids. *Geophys. Res. Letter*, 29 (No. 10) 10.1029/2001GL014506.

[27] Gao, B.-C., **P. Yang**, W. Han, R.-R. Li, and W. Wiscombe, 2002: An algorithm using visible and 1.38-μm channels to retrieve cirrus cloud reflectances from aircraft and satellite data. *IEEE Trans. Geosci. Remote Sens.*, 40, 1659-1668.

[28] Reichardt, J., S. Reichardt, **P. Yang**, and T. J. McGee, 2002: Retrieval of polar stratospheric cloud microphysical properties from lidar measurements: Dependence on particle shape assumptions. *J. Geophys. Res*. 107(D20), 8282, doi:10.1029/2001JD001021.

[29] McFarquhar, G. M., **P. Yang**, A. Macke, and A. J. Baran, 2002: A new parameterization of single-scattering solar radiative properties for tropical anvils using observed ice crystal size and shape distributions. *J. Atmos. Sci.*, 59, 2458-2478.

[30] Key, J. R., **P. Yang**, B. A. Baum, and S. L. Nasiri, 2002: Parameterization of shortwave ice cloud optical properties for various particle habits. *J. Geophys. Res*., 107(D13), 4181, doi:10.1029/2001JD000742.

[31] Chou, M.-D., K.-T. Lee, and **P. Yang**, 2002: Parameterization of shortwave cloud optical properties for a mixture of ice particle habits for use in atmospheric models, *J. Geophys. Res*. 107, D21, 4600,doi:10.1029/2002JD002061.

[32] Gao, B.-C., **P. Yang**, and R.-R. Li, 2003: Detection of high clouds in polar regions during the daytime using MODIS 1.375-micron channel. *IEEE Trans. Geosci. Remote Sens.* 41, 474-481.

[33] Baran, A. J., P. N. Francis, and **P. Yang**, 2003 : A process study of the dependence of ice crystal absorption on particle geometry: application to aircraft radiometric measurements of cirrus cloud in the terrestrial window region. *J. Atmos. Sci.,* 60,417-427.

[34] Baum, B. A., M. K. Harkey, R. A. Frey, G. G. Mace, and **P. Yang**, 2003: Nighttime Multilayered cloud detection using MODIS and ARM data, *J. Appl. Meteor*. 42, 905-919.

[35] **Yang, P.**, Y. X. Hu, D. M. Winker, J. Zhao, C. A. Hosteller, B. A. Baum, M. I. Mishchenko, and J. Reichardt, 2003: Enhanced lidar backscattering by horizontally oriented ice plates in cirrus clouds, *J. Quant. Spectrosc. Radiat. Transfer* 79-80, 1139-1157.

[36] **Yang, P.**, B. A. Baum, A. J. Heymsfield, Y. X. Hu, H.-L. Huang, S.-Chee Tsay, and S. Ackerman, 2003: Single-scattering properties of droxtals, *J. Quant. Spectrosc. Radiat. Transfer* 79-80, 1159-1180.

[37] Dessler, A. E., and **P. Yang**, 2003: The distribution of tropical thin cirrus clouds inferred from Terra MODIS data. *J. Climate* 16,1241-1247.

[38] Hu, Y. X., **P. Yang**, B. Lin, and C. Hostetler, 2003: : Discriminating between spherical and nonspherical scatterers with lidar using circular polarization: a theoretical study. *J. Quant. Spectrosc. Radiat. Transfer* 79-80,757-764.

[39] **Yang, P.**, H.-L. Wei, B. A. Baum, H.-L. Huang, A. J. Heymsfield, Y. X. Hu, B.-C. Gao, and D. D. Turner, 2003: The spectral signature of mixed-phase clouds composed of nonspherical ice crystals and spherical liquid droplets in the terrestrial window region. *J. Quant. Spectrosc. Radiat. Transfer* 79-80, 1171-1188.

[40] Turner, D. D., S. A. Ackerman, B. A. Baum, H. E. Revercomb, and **P. Yang**, 2003: Cloud phase determination using ground-based AERI observation at SHEBA. *J. Appl. Meteor*. 42, 701-715

[41] Gao, B.-C., **P. Yang**, ^G. Guo, S. K. Park, W. J. Wiscombe, and B.D. Chen, 2003: Measurements of water vapor and high clouds over the Tibetan Plateau with the Terra MODIS instrument. *IEEE Trans. Geosci. Remote Sens.*, 41, 895-900

[42] *Lee, Y.K., **P. Yang**, M.I. Mishchenko, B. A. Baum, Y. Hu, H.-L. Huang, W.J. Wiscombe, and A. J. Baran, 2003: Use of circular cylinders as surrogates for hexagonal pristine ice crystals in scattering calculations at infrared wavelengths. *Appl. Opt.* 42, 2653-2664

[43] ^Guo, G., **P. Yang**, Y. X. Hu, D. Winker, C. A. Hostetler, B. A. . Baum, and J. Reichardt, 2003: Manifestations of interference fluctuations of phase functions and backscattering cross sections for ice crystals with specific orientations. *J. of Optics A: Pure and Applied Optics* 5, 520-527

[44] **Yang, P**., M. G. Mlynczak, H.L. Wei, D. P. Kratz, B,A. Baum , Y. X. Hu, W. J. Wiscombe, A. Heidinger, and M. I. Mishchenko, 2003: Spectral signature of cirrus clouds in the far-infrared region: single-scattering calculations and radiative sensitivity study. *J. Geophys. Res.* 108(D18),4569,doi:10.1029/2002JD2002JD003291

[45] **Yang, P.**, H. L. Wei, G. W. Kattawar, Y. X. Hu, D. M. Winker, C. A. Hostetler, and B. A. Baum, 2003: Sensitivity of the backscattering Mueller matrix to particle shape and thermodynamic phase. *Appl. Opt.* 42, 4389-4395.

[46] Ma , X., J. Q. Lu, R. S. Brock, K. M. Jacobs, **P. Yang**, and X.-H. Hu , 2003: Determination of Complex refractive index of polystyrene microspheres from 370 to 1610 nm. *Phys. Medicine and Biology* 48, 4165-4172

[47] *Meyer, K., **P. Yang**, and B.-C. Gao, 2004: Optical thickness of tropical cirrus clouds derived from the MODIS 0.66 and 1.38-um channels. *IEEE Trans. Geosci. Remote Sens.* 42, 833-841.

[48] *Zhang, Z., **P. Yang**, G. W. Kattawar, S.-C. Tsay. B. A. Baum, H.-L. Huang, Y. X. Hu, A. J. Heymsfield, and J. Reichardt , 2004: Geometrical-optics solution to light scattering by droxtal ice crystals. *Appl. Opt*., 43, 2490-2499.

[49] Huang, H.-L., **P. Yang**, H. Wei, B.A. Baum, Y. X. Hu, P. Atonelli, and S. A. Ackerman, 2004: Inference of ice cloud properties from high-spectral resolution infrared observations. *IEEE Trans. Geosci. Remote Sens.* 42, 842-853.

[50] Chiriaco, M., H. Chepfer, V. Noel, A. Delaval, M. Haeffelin, P. Dubuisson, and **P. Yang**, 2004: Improving retrievals of cirrus cloud particle size coupling lidar and three-channel radiometric techniques, *Monthly Weather Review,* 132, 1684-1700.

[51] *Zhai, P., Y.-K. Lee, G. W. Kattawar, and **P. Yang**, 2004: Implementing the near-to far-field transformation in the finite-difference time domain method. *Appl. Opt.* 43, 3738-3746.

[52] King, M. D., S. Platnick, **P. Yang**, G. T. Arnold, M. A. Gray, J. C. Riedi, S. A. Ackerman, and K. N. Liou, 2004: Remote sensing of liquid water and ice cloud optical thickness, and effective radius in the Arctic: Application of air-borne multispectral MAS data. *J. Atmos. and Ocean. Technol.*, 21, 857-875.

[53] Reichardt, J., A. Dornbrack, S. Reichardt, **P. Yang**, and T. J. McGee , 2004: Mountain wave PSC dynamics and microphysics from ground-based lidar measurements and meteorological modeling. *Atmos. Chem. Phys.* 4, 1149-1165.

[54] **Yang, P.**, G. W. Kattawar, and W. J. Wiscombe, 2004: Effect of particle asphericity on single-scattering parameters: Comparison between Platonic solids and spheres *Appl. Opt.*, 43, 4427-4435.

[55] **Yang, P.**, G. W. Kattawar, K.N. Liou, and J. Q. Lu, 2004: Comparison of Cartesian grid configurations for applying the finite-difference time domain method to electromagnetic scattering by dielectric particles. *Appl. Opt.,* 43, 4611-4624.

[56] Li, C., G. W. Kattawar, and **P. Yang**, 2004: effects of surface roughness on light scattering by small particles. *J. Quant. Spectrosc. Radiat. Transfer*, 89, 123-131.

[57] **Yang, P.**, *Z. Zhang, B. A. Baum, H.-L. Huang, and Y. Hu, 2004: A new look at anomalous diffraction theory (ADT): Algorithm in cumulative projected-area distribution domain and modified ADT. *J. Quant. Spectrosc. Radiat. Transfer*, 89, 421-442.

[58] Gao, B.-C., *K. Meyer, and **P. Yang**, 2004: A new concept on remote sensing of cirrus optical depth and effective ice particle size using strong water vapor absorption channels near 1.38 and 1.88 um. *IEEE Trans. Geosci. Remote Sens.*, 42, 1891-1899.

[59] Hu, Y., B. Wielicki, **P. Yang**, P. Stackhouse, B. Lin, and D. Young, 2004: Application of deep convective cloud albedo observation to satellite-based study of terrestrial atmosphere: Monitoring the stability of space-borne measurements and assessing absorption anomaly. *IEEE Trans Geosci. and Remote Sensing*, 42, 2594-2599.

[60] Wei, H., **P. Yang**, J. Li, B. A. Baum, H.-L. Huang, S. Platnick, Y. X. Hu, and L. Strow, 2004: Retrieval of semitransparent ice cloud optical thickness from Atmospheric Infrared Sounder (AIRS) measurements. *IEEE Trans Geosci. and Remote Sensing,* 42, 2254-2267.

[61] Mace, G. G., Y. Zhang, S. Platnick, M. D. King, P. Minnis, and **P. Yang**, 2005: Evaluation of cirrus cloud properties derived from MODIS data using cloud properties derived from ground-based observations collected at the ARM SGP site. *J. Appl. Meteor.* 44, 221-240.

[62] Lu, J. Q., **P. Yang**, X.-H. Hu, 2005: Simulations of light scattering from a biconcave red blood cell using the FDTD method. *J. Biomedical Optics*, 10, 024022-1 – 024022-10.

[63] Wendish, M., P. Pilewskie, J. Pommier, S. Howard, **P. Yang**, A. J. Heymsfield, C. G. Schmitt, D. Baumgardner, and B. Mayer, 2005: Effects of cirrus crystal shape on solar spectral radiation—A case study for subtropical cirrus. *J. Geophys. Res.* 110, D03202, doi:10.1029/2004JD005294.

[64] **Yang, P.**, S.-C. Tsay, H. Wei, ^G. Guo, and Q. Ji, 2005: Remote sensing of cirrus optical and microphysical properties from ground-based infrared radiometric measurements. Part I: A new retrieval method based on microwindow spectral signature, *IEEE Geoscience and Remote Sensing Lett.* , 2, 128-131.

[65] ^Guo, G., Q. Ji, **P. Yang**, and S.-C. Tsay, 2005: Remote sensing of cirrus optical and microphysical properties from ground-based infrared radiometric measurements. Part II: Retrievals from CRYSTAL-FACE measurements, *IEEE Geoscience and Remote Sensing Lett.*, 2, 132-135.

[66] *Zhai, P., G. W. Kattawar, **P. Yang**, and C. Li, 2005: Application of the symplectic FDTD method to light scattering by small particles, *Appl. Opt.* 44, 1650-1656.

[67] Li, C., G. W. Kattawar, *P. Zhai, and **P. Yang**, 2005: Electric and magnetic energy density distributions inside and outside dielectric particles illuminated by a plane electromagnetic wave, *Optics Expres*s, 13, 4554-4559.

[68] Brock, R. S., X.-H. Hu, **P. Yang**, and J. Q. Lu, 2005: Evaluation of a parallel FDTD code and application to modeling of light scattering by deformed red blood cells. *Optics Express*, 13, 5279-5292.

[69] Baum, B. A., A. J. Heymsfield, **P. Yang**, and S. M. Bedka, 2005: Bulk Scattering Properties for the Remote Sensing of Ice Clouds. I: Microphysical Data and Models. *J. Appl. Meteor*. 44, 1885-1895.

[70] Baum, B. A., **P. Yang**, A. J. Heymsfield, S. Platnick, M. D. King, Y. X. Hu, and S. M. Bedka, 2005: Bulk Scattering Properties for the Remote Sensing of Ice Clouds. II: Narrowband Models. *J. Appl. Meteor.* 44, 1896-1911.

[71] Li, J., H.-L. Huang, C.-Y. Liu, **P. Yang**, T. J. Schmit, H. Wei, E. Weisz, L. Guan, and W. P. Menzel, , 2005: Retrieval of cloud microphysical properties from MODIS and AIRS. *J. Appl. Meteor.* 44, 1526-1543.

[72] Chepfer, H., V. Noel, P. Minnis, D. Baumgardner, L. Nguyen, G. Raga, M. L. McGill, and **P. Yang**, 2005: Particle habit in tropical ice clouds during CRYSTAL-FACE: Comparison of two remote sensing techniques with in situ observations, *J. Geophys. Res*., 110,D16204,doi:10.1029/2004JD005455.

[73] **Yang, P.**, H. Wei, H.-L. Huang, B. A. Baum, Y. X. Hu, G. W. Kattawar, M. I. Mishchenko, and Q. Fu, 2005: Scattering and absorption property database for nonspherical ice particles in the near- through far-infrared spectral region, *Appl. Opt.*, 44, 5512-5523.

[74] Hong, G., **P. Yang**, H. Huang, S. A. Ackerman, and I. N. Sokolik, 2006: Simulation of high-spectral-resolution infrared signature of overlapping cirrus clouds and mineral dust, *Geophys. Res. Lett.*, 33, L04805, doi:10.1029/2005GL024381.

[75] *Chen, G., **P. Yang**, G. W. Kattawar, and M. I. Mishchenko, 2006: Scattering phase functions of horizontally oriented hexagonal ice crystals, *J. Quant. Spectros. Rad. Transfer, 100,* 91-102.

[76] *Xie, Y., **P. Yang**, B.-C. Gao, G. W. Kattawar, and M. I. Mishchenko, 2006: Effect of ice crystal shape and effective size on snow bidirectional reflectance, *J. Quant. Spectros. Rad. Transfer,* 100, 457-469.

[77] You, Y., G. W. Kattawar, **P. Yang**, Y. Hu, and B. A. Baum, 2006: Sensitivity of depolarized lidar signals to cloud and aerosol particle properties, *J. Quant. Spectros. Rad. Transfer,* 100, 470-482..

[78] Li, C., G. W. Kattawar, and **P. Yang**, 2006: Identification of aerosols by their backscattered Mueller Images, *Optics Expres*s, 14, 3616-3621.

[79] *Lee, Y. K., **P. Yang**, Y. Hu, B. A. Baum, N. G. Loeb, and B.-C. Gao, 2006: Potential nighttime contamination of CERES clear-sky field of view by optically thin cirrus during the CRYSTAL-FACE campaign. *J. Geophys. Res.* Vol. 111, No. D9, D09203 10.1029/2005JD006372

[80] Sun, W., N. G. Loeb, and **P. Yang**, 2006: On the retrieval of ice cloud particle shapes from POLDER measurements. *J. Quant. Spectrosc. Radiat. Transfer,* 101, 435-447.

[81] *Lee, J., **P. Yang**, A. E. Dessler, B. A. Baum, and S. Platnick, 2006: The influence of thermodynamic phase on the retrieval of mixed-phase cloud microphysical and optical properties in the visible and near infrared region, *IEEE Geoscience and Remote Sensing Lett.* , 3, 287-291.

[82] Dubovik, O., A. Sinyuk, T. Lapyonok, B. N. Holben, M. Mishchenko, **P. Yang**, T. F. Eck, H. Volten, O. Munoz, B. Veihelmann, W. J. van der Zande, J.-F. Leon, M. Sorokin, and I. Slutsker, 2006: Application of spheroid models to account for aerosol particle nonsphericity in remote sensing of desert dust, *J. Geophys. Res.* 111, D11208, doi:10.1029/2005JD006619.

[83] *Lawless, R., *Y. Xie, **P. Yang**, G. W. Kattawar, and I. Laszlo, 2006: Polarization and effective Mueller matrix for multiple scattering of light by nonspherical ice crytsals, *Optics Express.* 14, 6381-6393.

[84] *You, Y, G. W. Kattawar, C. Li, and **P. Yang**, 2006: Internal dipole radiation as a tool for particle identification, *Appl. Opt.,* 9115-9124.

[85] ^Niu, J., **P. Yang**, H. Huang, J. Davis, J. Li, B. Baum and Y. Hu, 2007: A fast infrared radiative transfer model for overlapping clouds, *J. Quant. Spectros. Rad. Transfer,* 103, 447-459.

[86] *Zhang, Z., **P. Yang**, G. W. Kattawar, H.-L. Huang, T. Greenwald, J. Li, B. A. Baum, D. K. Zhou, and Y. X. Hu, 2007: A fast infrared radiative transfer model based on the adding-doubling method for hyperspectral remote sensing applications, *J. Quant. Spectros. Rad. Transfer,* 105, 243-263.

[87] Wendisch, M., **P. Yang**, and P. Pilewskie, 2007: Effects of ice crystal habit on the thermal infrared radiative properties and forcing of cirrus clouds, *J. Geophys. Res.* 112, D08201, doi:10.1029/2006JD007899.

[88] Baum, B. A., **P. Yang**, S. Nasiri, A. K. Heidinger, A. J. Heymsfield, and J. Li, 2007: Bulk Scattering Properties for the Remote Sensing of Ice Clouds. III: High resolution spectral models from 100 to 3250 cm^{-1}. *J. Appl. Meteor. Clim.*, 46, 423-434.

[89] Hong, G., **P. Yang**, H.-L. Huang, B. A. Baum, Y. X. Hu, and S. Platnick, 2007: The sensitivity of ice cloud optical and microphysical passive satellite retrievals to cloud geometrical thickness, *IEEE Trans Geosci. and Remote Sensing,* 45, 1315-1323.

[90] Hu, Y., M. Vaughan, Z. Liu, B. Lin, **P. Yang**, D. Flittner, B. Hunt, R. Kuehn, J. Huang, D. Wu, S. Rodier, K. Powell, C. Trepte, and D. Winker, 2007, The depolarization - attenuated backscatter relation: CALIPSO lidar measurements vs. theory, *Optics Express* 15, 5327-5332.

[91] Li, C. G. W. Kattawar, *Y. You, *P. Zhai, and, **P. Yang**, 2007: FDTD solutions for the distribution of radiation from dipoles embedded in dielectric particles, *J. Quant. Spectros. Rad. Transfer,* 106, 257-261.

[92] *Zhai, P., C. Li, G. W. Kattawar, and **P. Yang**, 2007: FDTD far-field scattering amplitudes: comparison between surface and volume integration methods, *J. Quant. Spectros. Rad. Transfer,* 106, 590-594.

[93] *Zhang, Z., **P. Yang**, G. W. Kattawar, and W. J. Wiscombe, 2007: Single-scattering properties of Platonic solids in Geometric-Optics regime, *J. Quant. Spectros. Rad. Transfer,* 106, 595-603.

[94] Yue, Q., K. N. Liou, S. C. Ou, B. H. Kahn, **P. Yang**, and G. Mace, 2007: Interpretation of AIRS data in thin cirrus atmospheres based on a fast radiative transfer model, *J. Atmos. Sci.* 64, 3827-3842.

[95] *Meyer, K., **P. Yang**, and B.-C. Gao, 2007: Tropical ice cloud optical depth, ice water path, and frequency fields inferred from the MODIS level-3 data, *Atmos. Res.*, 85, 171-182.

[96] *Meyer, K., **P. Yang**, and B.-C. Gao, 2007: Ice cloud optical depth from MODIS cirrus reflectance, *IEEE Geoscience and Remote Sensing Lett.*, 4, 471-474.

[97] Hong, G., **P. Yang**, B.-C. Gao, B. A. Baum, Y. X. Hu, M. D. King and S. Platnick, 2007: High cloud properties from three years of MODIS Terra and Aqua Data over the Tropics, *J. Appl. Meteor. Clim.* 46, 1840-1856.

[98] Wei, H., X. Chen, R. Rao, Y. Wang, and **P. Yang**, 2007: A moderate-spectral-resolution transmittance model based on fitting the line-by-line calculations, *Optics Express,* 15, 8360-8370.

[99] Weisz, E., J. Li, J. Li, D. K.Zhou, H.-L. Huang, M. D. Goldberg, and **P. Yang**, 2007: Cloudy sounding and cloud-top height retrieval from AIRS alone single field-of-view radiance measurements, *Geophys. Res. Letter,* 34, L12802, doi: 10.1029/2007GL030219.

[100] *Zhai, P.-W., G. W. Kattawar, and **P. Yang**, 2007: The far-field modified uncorrelated single-scattering approximation in light scattering by a small volume element, *Optics Express*, 15, 8479-8485.

[101] **Yang, P.**, L. Zhang, G. Hong, S. L. Nasiri, B. A. Baum, H.-L. Huang, M. D. King and S. Platnick, 2007: Differences between Collection 004 and 005 MODIS ice cloud optical/microphysical products and their impact on radiative forcing simulations, *IEEE Transactions on Geosciences and Remote Sensing*, 45, 2886-2899.

[102] **Yang, P.**, *Q. Feng, G. Hong, G. W. Kattawar, W. J. Wiscombe, M. I. Mishchenko, O. Dubovik, I. Laszlo, and I. N. Sokolik, 2007: Modeling of the scattering and radiative properties of nonspherical dust particles, *J. of Aerosol Sci.* 38, 995-1014.

[103] Schmidt, K. S., P. Pilewskie, S. Platnick, G. Wind, **P. Yang**, and M. Wendisch, 2007: Comparing irradiance fields derived from Moderate Resolution Imaging Spectroradiometer airborne simulator cirrus cloud retrievals with SSFR measurements, *J. Geophys. Res.* 112, D24206, doi: 10.1029/2007JD008711.

[104] Hong, G., **P. Yang**, F. Weng, and Q. Liu, 2008: Microwave Scattering Properties of Sand Particles: Application to the Simulation of Microwave Radiances over Sandstorms, *J. Quant. Spectros. Rad. Transfer* 109, 684-702.
[105] Zhai, P.-W., Y. You, G. W. Kattawar, and **P. Yang**, 2008: Monostatic lidar/radar invisibility using coated spheres, *Optics Express* 16, 1431-1439.
[106] *You, Y., G. W. Kattawar, Zhai, P.-W., and **P. Yang**, 2008: Zero-backscatter cloak for aspeherical particles using a generalized DDA formalism, *Optics Express* 16, 2068-2079.
[107] *Chen, G., **P. Yang**, and G. W. Kattawar, 2008: Application of the pseudospectral time-domain method to the scattering of light by nonspherical particles, *J. Opt. Soc. Amer. A.* 25, 785-790, 2008.
[108] Zhai, P.-W., G. W. Kattwar, and **P. Yang**, 2008: An impulse response solution to the 3D vector RTE in atmosphere-ocean systems: Part I: the Monte Carlo method, *Applied Optics* 47, 1037-1047.
[109] Zhai, P.-W., G. W. Kattwar, and **P. Yang**, 2008: An impulse response solution to the 3D vector RTE in atmosphere-ocean systems: Part II: the hybrid matrix operator-Monte Carlo method, *Applied Optics* 47, 1063-1071.
[110] *Cho, H.-M., **P. Yang**, G. W. Kattawar, S. L. Nasiri, Y. Hu, P. Minnis, C. Tepte, and D. Winker, 2008: Depolarization ratio and attenuated backscatter for nine cloud types: analyses based on collocated CALIPSO lidar and MODIS measurements, *Optics Express*, 16, 3931-3948.
[111] *You, Y., G. W. Kattawar, Zhai, P.-W., and **P. Yang**, 2008: Invisibility cloaks for irregular particles using coordinate transformations, *Optics Express*, 16, 6134-6145.
[112] ^Niu, J., L. D. Carey, **P. Yang**, and T. H. Vonder Haar, 2008: Optical properties of a vertically inhomogeneous mid-latitude mid-level mixed-phase altocumulus in the infrared region, *Atmos. Res.* 88, 234-242.
[113] **Yang, P.**, G. W. Kattawar, G. Hong, P. Minnis and Y. Hu, 2008: Uncertainties associated with the surface texture of ice particles in satellite-based retrieval of cirrus clouds: Part I. Single-scattering properties of ice crystals with surface roughness, *IEEE Transactions on Geosciences and Remote Sensing*, 46, 1940-1947.
[114] **Yang, P.**, G. Hong, G. W. Kattawar, P. Minnis and Y. Hu, 2008: Uncertainties associated with the surface texture of ice particles in satellite-based retrieval of cirrus clouds: Part II. Effect of particle surface roughness on retrieved cloud optical thickness and effective particle size, *IEEE Transactions on Geosciences and Remote Sensing* 46, 1948-1957.
[115] Hu, Y., K. Stamnes, M. Vaughan, J. Pelon, C. Weimer, D. Wu, M. Cisewski, W. Sun, **P. Yang**, B. Lin, A. Omar, D. Flittner, C. Hostetler, C. Trepte, D. Winker, G. Gibson, and M. Santa-Maria, 2008: Sea surface wind speed estimation from space-based lidar measurements, *Atmos. Chem. and Phy*., 8, 3591-3601.
[116] Sun, W., B. Lin, Y. Hu, Z. Wang, Y. Fu, *Q. Feng and **P. Yang**, 2008: Side-face effect of a dielectric strip on its optical properties, *IEEE Transactions on Geosciences and Remote Sensing*, 46, 2337-2344.
[117] Jin, Z., T. P. Charlock, **P. Yang**, Y. Xie, and W. Miller, 2008: Snow Optical Properties for Different Particle Shapes With Application to Snow Grain Size Retrieval and MODIS/CERES Radiance Comparison Over Antarctic, *Remote Sensing of Environment*, 112, 3563-3581.
[118] Hong, G., Q. Feng, **P. Yang**, G. Kattawar, P. Minnis, and Y.-X. Hu, 2008: Optical properties of ice particles in young contrails, *J. Quant. Spectrosc. Radiat. Transfer.* 109, 2635-2647.

[119] Dessler, A. E., **P. Yang**, J. Lee, J. Solbrig, *Z. Zhang and K. Minschwaner, 2008: A comparison of clear-sky OLR between CERES measurements and model calculations and the depdendence of OLR on temperature and water vapor, *J. Geophys. Res.* 113, D17102, doi:10.1029/2008JD010137.

[120] Carey, L. D., J. Niu, **P. Yang**, J. A. Kankiewicz, V. Larson, and T. Vonder Haar, 2008: The vertical profile of liquid and ice water content in mid-latitude mixed-phase altocumulus clouds, *J. Appl. Meteor. Clim.* 47, 2487-2495.

[121] **Yang, P.**, *Z. Zhang, G. W. Kattawar, S. G. Warren, B. A. Baum, H.-L. Huang, Y. Hu, D. Winker, and J. Iaquinta, 2008: Effect of cavities on the optical properties of bullet rosettes: Implications for active and passive remote sensing of ice cloud properties, *J. Appl. Meteor. Clim.* 47, 2311-2330.

[122] Dessler, A. E., Z. Zhang, and **P. Yang**, 2008, Water-vapor climate feedback inferred from climate fluctuations, 2003–2008, *Geophys. Res. Lett*., 35, L20704, doi:10.1029/2008GL035333.

[123] Hong G., **P. Yang**, B. A. Baum, A. J. Heymsfield, 2008, Relationship between ice water content and equivalent radar reflectivity for clouds consisting of nonspherical ice particles, *J. Geophys. Res.*, 113, D20205, doi:10.1029/2008JD009890.

[124] Dubuisson, P., V. Giraud, J. Pelon, B. Cadet, and **P. Yang**, 2008: Sensitivity of thermal infrared radiation at the top of the atmosphere and the surface to ice cloud microphysics, *J. Appl. Meteor. Clim.* 47, 2545-2560.

[125] Comstock, J. M., R. F. Lin, D. O'C. Starr, and **P. Yang**, 2008: Understand ice supersaturation, particle growth, and number concentration in cirrus clouds, *J. Geophys. Res.* 113, D23211, doi: 10.1029/2008JD010332.

[126] Hong, G., **P. Yang**, P. Minnis, Y. Hu, and G. North, 2008: Do contrails significantly reduce diurnal temperature range? *Geophys. Res. Lett.* 35, L23815, doi:10.1029/2008GL036108.

[127] *Bi, L., **P. Yang**, G. W. Kattawar, and R. Kahn, 2009: Single-scattering properties of tri-axial ellipsoidal particles for a size parameter range from the Rayleigh to geometric-optics regimes, *Appl. Opt.* 48, 114-126.

[128] Zhai, P., G. W. Kattawar, and **P. Yang**, 2009: Mueller matrix imaging of targets under an air-sea interface, *Appl. Opt.*, 48, 250-260.

[129] **Yang, P**., and K. N. Liou, 2009: Effective refractive index for determining ray propagation in an absorbing dielectric particle, *J. Quant. Spectrosc. Radiat. Transfer.* 110, 300-306.

[130] You, Y., G. W. Kattawar, and **P. Yang**, 2009: Invisibility cloaks for toroids. *Optics Express*. 17, 6592-6599.

[131] Hong, G., **P. Yang**, B. A. Baum, A. J. Heymsfield, F. Weng, Q. Liu, G. Heygster, and S. A. Buehler, 2009: Scattering database in the millimeter and submillimeter wave range of 100-1000 GHZ for nonspherical ice particles. *J. Geophys. Res.* VOL. 114, D06201, doi:10.1029/2008JD010451, 2009.

[132] *Garrett, K. J., **P. Yang**, S. Nasiri, C. R. Yost, and B. Baum, 2009: Influence of cloud top height and geometric thickness on a MODIS infrared-based ice cloud retrieval, *J. Appl. Meteor. Clim.* 48, 818-832.

[133] You, Y., P.-W. Zhai, G. W. Kattawar, and **P. Yang**, 2009: Polarized radiance fields under a dynamic ocean surface: A 3D radiative transfer solution, *Appl. Opt.* 48, 3019-3029.

[134] *Xie, Y., **P. Yang**, G. W. Kattawar, P. Minnis, Y. Hu, 2009: Effect of the inhomogeneity of ice crystals on retrieving ice cloud optical thickness and effective particle size, *J. Geophys. Res.* 114, D11203, doi:10.1029/2008JD011216.
[135] **Yang, P.**, and Q. Fu, 2009: Dependence of ice crystal optical properties on particle aspect ratio, *J. Quant. Spectrosc. Radiat. Transfer,* 110, 1604-1614.
[136] **Yang, P.**, and K. N. Liou, 2009: An "exact" geometric-optics approach for computing the optical properties of large absorbing particles, *J. Quant. Spectrosc. Radiat. Transfer.* 110, 1162-1177.
[137] Ding, S., *Y. Xie, **P. Yang**, F. Weng, Q. Liu, B. Baum, and Y. X. Hu, 2009: Estimate of radiation over clouds and dust aerosols: optimized number of terms in phase function expansion, *J. Quant. Spectrosc. Radiat. Transfer.* 110, 1190-1198.
[138] Ham, S.-H., B.-J. Sohn, **P. Yang**, and B. A. Baum, 2009: Assessment of the quality of MODIS cloud products from radiance simulations, *J. Appl. Meteor. Clim.*, 48, 1591-1611.
[139] *Feng, Q., **P. Yang**, G. W. Kattawar, N. C. Hsu, S.-C. Tsay, and I. Laszlo, 2009: Effects of particle nonsphericity and radiation polarization on retrieving dust properties from satellite observations, *J. of Aerosol Sci*., 40, 776-789.
[140] Oreopoulos, L., S. Platnick, G. Hong, **P. Yang**, and R. F. Cahalan, 2009: The shortwave radiative forcing bias of liquid and ice clouds from MODIS observations, *Atmospheric Chemistry and Physics,* 9, 5865-5875.
[141] *Zhang, Z., **P. Yang**, G. W. Kattawar, J. Riedi, L. C.-Labonnote, B. A. Baum, S. Platnick, and H.-L. Huang, 2009: Influence of ice particle model on retrieving cloud optical thickness from satellite measurements: model comparison and implication for climate study, *Atmos. Chem. Phys.* 9, 7115-7129.
[142] Wong, S., A. E. Dessler, N. Mahowald, **P. Yang**, and *Q. Feng, 2009: Maintenance of Lower Tropospheric Temperature Inversion in the Saharan Air Layer by Dust and Dry Anomaly, *J. Climate.* 22, 5149-5162.
[143] *Cho, H-M, S. L. Nasiri, and **P. Yang**, 2009: Application of CALIOP Measurements to the Evaluation of Cloud Phase Derived from MODIS Infrared Channels, *J. Appl. Meteor. Clim.* 48, 2169-2180.
[144] Hu, Y., D. Winker, M. Vaughan, B. Lin, A. Omar, C. Trepte, D. Flittner, **P. Yang**, S. L. Nasiri, B. Baum, W. Sun, Z. Liu, Z. Wang, S. Young, K. Stamnes, J. Huang, R. Kuehn, and R. Holz, 2009: CALIPSO/CALIOP Cloud Phase Discrimination Algorithm, *J. Atmos. and Ocean. Technol*., 26, 2293-2309.
[145] Sohn, B.-J., S.-H. Ham, and **P. Yang**, 2009: Possibility of the visible-channel calibration using deep convective clouds overshooting the TTL, *J. Appl. Meteor. Clim.* 48, 2271-2283.
[146] *Bi, L., **P. Yang**, G. Kattawar, B. A. Baum, Y. X. Hu, D. M. Winker, R. S. Brock, and J. Q. Lu, 2009: Simulation of the color ratio associated with the backscattering of radiation by ice crystals at 0.532 and 1.064-μm wavelengths, *J. Geophys. Res.* 114, D00H08, doi:10.1029/2009JD011759.
[147] *Lee, J, **P. Yang**, A. Dessler, B.-C. Gao, and S. Platnick, 2009: Distribution and radiative forcing of tropical thin cirrus clouds, *J. Atmos. Sci.* 66, 3721-3731.
[148] Hong, G., **P. Yang**, B. A. Baum, A. J. Heymsfield, and K.-M. Xu, 2009: Parameterization of shortwave and longwave radiative properties of ice clouds for use in climate models, *J. Climate,* 22, 6287-6312.
[149] *Bi, L., **P. Yang**, and G. W. Kattawar, 2010: On the far-field in the Lorentz-Mie theory and T-matrix method, *J. Quant. Spectrosc. Radiat. Transfer*, 11, 515-518.

[150] *Bi, L., **P. Yang**, G. W. Kattawar, and R. Khan, 2010: Modeling optical properties of mineral aerosol particles by using non-symmetric hexahedra, *Appl. Opt*. 49, 334-342.
[151] Yang, Y., A. Marshak, T., Varnai, W. Wiscombe, and **P. Yang**, 2010: Uncertainties in ice sheet altimetry measurements from a space-borne 1064 nm single channel lidar due to undetected thin clouds. *IEEE Transactions on Geosciences and Remote Sensing*, 48, 250-259.
[152] **Yang, P.**, G. Hong, A. E. Dessler, S. C. Ou, K. N. Liou, P. Minnis, and Hashvardhan, 2010: Contrails and Induced Cirrus: Optics and Radiation, *Bulletin of the American Meteorological Society,* 91, 473-478.
[153] *Meng, Z., **P. Yang**, G. W. Kattawar, *L. Bi, K. N. Liou, I. Laszlo, 2010: Single-scattering Properties of Nonspherical Mineral Dust Aerosols: A Database for Application to Radiative Transfer Calculations, *J. of Aerosol Science*, 41, 501-512.
[154] *Tang, G., R. Lee Panetta, **P. Yang**, 2010: Application of the discontinuous Galerking time domain method to the simulation of the optical properties of dielectric particles, *Appl. Opt.* 49, 2827-2840.
[155] Liou, K. N., Y. Takano, and **P. Yang**, 2010: On geometric optics and surface waves for light scattering by spheres, *J. Quant. Spectrosc. Radiat. Transfer,* 111, 1980-1989.
[156] Li, H., *C. Liu, *L. Bi, **P. Yang**, and G. W. Kattawwar, 2010: Numerical accuracy of "equivalent" spherical approximations for computing ensemble-averaged scattering properties of fractal soot aggregates, *J. Quant. Spectrosc. Radiat. Transfer*, 111, 2127-2132.
[157] *Bi, L, **P. Yang**, G. W. Kattawar, 2010: Edge-effect contribution to the extinction of light by dielectric disks and cylindrical particles, *Appl. Opt*. 49, 4641-4646.
[158] Zhang, Z., S. Platnick, **P. Yang**, A. K. Heidinger, and J. M. Comstock, 2010: Effects of ice particle size vertical inhomogeneity on the passive remote sensing of ice clouds, *J. Geophys. Res*., 115, D17203, doi:10.1029/2010JD013835.
[159] Baum, B. A., **P. Yang**, Y.-X. Hu, and *Q. Feng, 2010: The impact of ice particle roughness on the scattering phase matrix, *J. Quant. Spectrosc. Radiat. Transfer*, 111, 2534-2549.
[160] *Li, Y., G. R. North, **P. Yang**, and B. A. Baum, 2010: Exploration of the MODIS cloud-top property products for the investigation of equatorial wave system, *J. Appl. Meteor. Clim.* 49, 2050-2057.
[161] Kindel, B., K. S. Schmidt, P. Pilewskie, B. A. Baum, **P. Yang**, and S. Platnick, 2010: Observations and modeling of ice cloud shortwave spectral albedo during the Tropical Composition, Cloud and Climate Coupling Experiment, *J. Geophys. Res*., 115, D00J18, doi:10.1029/2009JD013127.
[162] Wind, G., S. Platnick, M. D. King, P. A. Hubanks, M. J. Pavolonis, A. K. Heidinger, **P. Yang**, and B. A. Baum, 2010: Multilayer cloud detection with the MODIS near-infrared water vapor absorption band. *J. Appl. Meteor. Clim*., 49, 2315-2333.
[163] Hong, G., **P. Yang**, A. K. Heidinger, M. J. Pavolonis, B. A. Baum, and S. E. Platnick, 2010: Detecting opaque and non-opaque Tropical upper-tropospheric ice clouds; A trispectral technique based on MODIS 8-12 micron window bands.*J. Geophys. Res*.,115, D20214, doi:10.1029/2010JD014004.
[164] Lee, Y.K., T.J. Greenwald, **P. Yang**, S. Ackerman, and H.-L. Huang, 2010: Global distribution of instantaneous daytime radiative effects of high thin clouds observed by the cloud profiling radar, *J. Appl. Remote Sensing*, 4, 043543.
[165] Jourdan, O., G. Mioche, T. J. Garrett, A. Schwarzenböck, J. Vidot, *Y. Xie, V. Shcherbakov, **P. Yang**, and J.-F. Gayet (2010), Coupling of the microphysical and optical

properties of an Arctic nimbostratus cloud during the ASTAR 2004 experiment: Implications for light-scattering modeling, *J. Geophys. Res.*, *115*, D23206, doi:10.1029/2010JD014016.

[166] Gouesbet, G., **P. Yang**, and F. Onofri, 2019: Afterword. Laser-light and interactions with particles (LIP), 2018. *J. Quant. Spectrosc. Radiat. Transfer,*225, 45-49.

[167] Chen, X., H. Wei, **P. Yang**, and B. A. Baum, 2011: An efficient method for computing atmospheric radiances in clear-sky and cloudy conditions. *J. Quant. Spectrosc. Radiant. Transfer*, 112, doi:10.1016/j.jqsrt.2010.08.013, 109-118.

[168] ^Bi, L, **P. Yang**, G. W. Kattawar, Y. Hu, and B. A. Baum, 2011: Diffraction and External Reflection by Dielectric Faceted Particles, *J. Quant. Spectrosc. Radiat. Transfer,* 112*,* doi:10.1016/j.jqsrt.2010.02.007, 163-173

[169] Ding, S., **P. Yang**, F. Weng, Q. Liu, Y. Han, P. van Delst, J. Li and B. Baum, 2011: Validation of the community radiative transfer model, *J. Quant. Spectrosc. Radiat. Transfer,* 112*,* doi:10.1016/j.jqsrt.2010.11.009, 1050-1064.

[170] ^Xie, Y., **P. Yang**, G. W. Kattawar, B. A. Baum and Y. Hu, 2011: Simulation of the optical properties of plate aggregates for application to the remote sensing of cirrus clouds, *Appl. Opt*., 50, 1065-1081.

[171] Zhou, D. K., A. M. Larar, X. Liu, W. L. Smith, L. L. Strow, **P. Yang**, P. Schlussel, and X. Calbet, 2011: Global land surface emissivity retrieved from satellite ultraspectral IR measurements, *IEEE Transactions on Geosciences and Remote Sensing*, 49, 1277-1290.

[172] Liu, X., L. Yan, **P. Yang**, Z.-Y. Yin, and G. R. North, 2011: Infulence of Indian summer monsoon on aerosol loading in East Asia, *J. Appl. Meteor. Clim*. 50, 523-533.

[173] ^Bi, L., **P. Yang**, G. W. Kattawar, Y. Hu and B. A. Baum, 2011: Scattering and absorption of light by ice particles: solution by a new physical-geometric optics hybrid method, *J. Quant. Spectrosc. Radiat. Transfer,* 112*,* doi: 10.1016/j.jqsrt.2011.02.015, 1492-1508.

[174] Shi, Z., X. Liu, Z. An, B. Yi, **P. Yang**, and N. Mahowald, 2011: Simulated variations of eolian dust from inner Asian deserts at the mid-Pliocene, last glacial maximum, and present day: contributions from the regional teconic uplift and global climate change, *Climate Dynamics,* doi: 10.1007/s00382-011-1078-1, 37: 2289-2301.

[175] Liou, K.N., Y. Takano, **P. Yang**, 2011: Light absorption and scattering by aggregates: application to black carbon and snow grains. *J. Quant. Spectrosc. Radiat. Transfer,* 112*,* 1581-1594.

[176] Baum, B.A., **P. Yang**, A. J. Heymsfield, C. G. Schmitt, ^Y. Xie, A. Bansemer, Y.-X. Hu, and Z. Zhang, 2011: Improvements in shortwave bulk scattering and absorption models for the remote sensing of ice clouds. *J. Appl. Meteor. Clim*. 50, 1037-1056.

[177] **Yang, P.**, M. Wendisch, ^L. Bi, G. Kattawar, M. Mishchenko, and Y. Hu, 2011: Dependence of extinction cross-section on incident polarization state and particle orientation. *J. Quant. Spectrosc. Radiat. Transfer,* 112*,* 2035-2039.

[178] *Yi, B., C. N. Hsu, **P. Yang**, and S.-H. Tsay, 2011: Radiative transfer simulation of dust-like aerosols: Uncertainties from particle shape and refractive index. *J. Aerosol Sci.,* 42*,* 631-644.

[179] *Feng, Q., N. C. Hsu, **P. Yang**, and S.-C. Tsay, 2011: Effect of thin cirrus clouds on dust optical depth retrievals from MODIS observations, *IEEE Trans. Geosci. Remote Sens., 49, 2819-2827.*

[180] Iwabuchi, H., and **P. Yang**, 2011: Temperature dependence of ice optical constants: Implications for simulating the single-scattering properties of cold ice clouds. *J. Quant. Spectrosc. Radiat. Transfer,* 112, 2520-2525.

[181] Minnis, P., S. Sun-Mack, D. F. Young, P. W. Heck, D. P. Garber, Y. Chen, D. A. Spangenberg, R. F. Arduini, Q. Z. Trepte, W. L. Smith, Jr., J. K. Ayers, S. C. Gibson, W. F. Miller, V. Chakrapani, Y. Takano, K. N. Liou, ^Y. Xie, and **P. Yang**, 2011: CERES edition-2 cloud property retrievals using TRMM VIRS and TERRA and AQUA MODIS data -- part I: Algorithms. *IEEE Trans. Geosci. Remote Sens.*, **49**, 4374-4400.

[182] Yan, L., X. Liu, **P. Yang**, Z.-Y. Yin, and G. R. North, 2011: Study of the impact of summer monsoon circulation on spatial distribution of aerosols in East Asia based on numerical simulations, *J. Appl. Meteor. Clim*., 50, 2270-2282.

[183] *Wang, C., **P. Yang**, B. A. Baum, S. Platnick, A. K. Heidinger, Y. Hu, and R. E. Holz, 2011: Retrieval of ice cloud optical thickness and effective particle size using a fast infrared radiative transfer model, *J. Appl. Meteor. Clim*., 50, 2283-2297.

[184] Li, C., G. W. Kattawar, and **P. Yang**, 2012: A new algorithm to achieve rapid field convergence in the frequency domain when using FDTD. *J. of Electromagnetic Waves and Applications,* 18, 767-807

[185] *Liu, C., R. L. Panetta, and **P. Yang**, 2012: The influence of water coating on the optical scattering properties of fractal soot aggregates, *Aerosol Science and Technology, 46*, 31-43.

[186] Liu, X., S. Ding, ^L. Bi, and **P. Yang**, 2012: On the use of scattering kernels to calculate ice cloud bulk optical properties. *J. Atmos. and Ocean. Technol.*, 29, 50-63.

[187] *Yi, B., **P. Yang**, K. P. Bowman, and X. Liu, 2012: Aerosol-Cloud-Precipitation Relationships from satellite observations and global climate model simulations, *J. Appl. Remote Sens.* 6, 063503-1 – 063503-10.

[188] Iwabuchi, H., **P. Yang**, K. N. Liou, and P. Minnis, 2012: Physical and optical properties of persistent contrails: climatology and interpretation, *J. Geophys. Res*. VOL. 117, D06215, doi:10.1029/2011JD017020, 2012.

[189] ^Xie, Y., **P. Yang**, G. W. Kattawar, P. Minnis, Y. Hu, and D. L. Wu, 2012: Determination of ice cloud models using MODIS and MISR data. *International J. of Remote Sensing*, 33:13, 4219-4253.

[190] *Liu, C., R. L. Panetta, **P. Yang**, 2012: Application of the pseudo-spectral time domain method to compute particle single-scattering properties for size parameters up to 200. *J. Quant. Spectrosc. Radiat. Transfer, 113, 1728-1740.*

[191] Baum, B. A., W. P. Menzel, R. A. Frey, D. Tobin, R. E. Holz, S. A. Ackerman, A. K. Heidinger, and **P. Yang**: MODIS cloud top property refinements for Collection 6. *J. Appl. Meteor. Clim.* 51, 1145-1163.

[192] Takano, Y., K. N. Liou, **P. Yang**, 2012: Diffraction by rectangular parallelepiped, hexagonal cylinder, and three-axis ellipsoid: some analytic solutions and numerical results. *J. Quant. Spectrosc. Radiat. Transfer, 113, 1836-1843*

[193] *Li, Y., **P. Yang**, G. R. North, A. Dessler, 2012: Test of the fixed anvil temperature hypothesis. *J. Atmos. Sci.*, 69, 2317-2328.

[194] *Liu, C., L. Bi, R. L. Panetta, **P. Yang**, and M. A. Yurkin, 2012: Comparison between the pseudo-spectral time domain method and the discrete dipole approximation for light scattering simulations. *Optics Express*, 20, 16763-16776.

[195] *Zhou, C., **P. Yang**, A. E. Dessler, Y. Hu and B. A. Baum, 2012: Study of horizontally oriented ice crystals with CALIPSO observations and comparison with Monte Carlo Radiative Transfer Simulations, *J. Appl. Meteor. Clim.* 51, 1426-1439.

[196] Lee, J., J. Kim, **P. Yang**, and N. C. Hsu, 2012: Improvement of aerosol optical depth retrieval from MODIS spectral reflectance over the global ocean using new aerosol

models archived from AERONET inversion data and tri-axial ellipsoidal dust database, *Atmos Chem Phys*, 12, 7087-7102.

[197] Minnis, P., G. Hong, J. K. Ayers, W. L. Smith, C. R. Yost, A. J. Heymsfield. G. M. Heymsfield, D. L. Hlavka, M. D. King, E. Korn, M. J. McGill, H. B. Selkirk, A. M. Thompson, L. Tiang, and **P. Yang**, 2012: Simulations of Infrared Radiances over a Deep Convective Cloud System Observed during TC4: Potential for Enhancing Nocturnal Ice Cloud Retrievals, *Remote Sensing*, 4, 3022-3054.

[198] van Diedenhoven, B., B. Cairns, I. V. Geogdzhayer, A. M. Fridlind, A. S. Ackerman, **P. Yang**, and B. A. Baum, 2012: Remote sensing of ice crystal asymmetry parameter using multi-directional polarization measurements – Part 1: Methodology and evaluation with simulated measurements, *Atmos. Meas. Tech*., 5, 2361–2374.

[199] Gao, M., Y. You, **P. Yang**, and G. W. Kattawar, 2012: Backscattering properties of small layered plates: a model for iridosomes. *Optics Express*, 20, 25111-25120.

[200] ^Xie, Y., **P. Yang**, K. N. Liou, P. Minnis, and D. P. Duda, 2012: Parameterization of contrail radiative properties for climate studies, *Geophys. Res. Letter*, VOL. 39, L00F02, doi:10.1029/2012GL054043, 2012

[201] *Wang, C., S. Ding, **P. Yang**, B. Baum, and A. E. Dessler, 2012: A new approach to retrieving cirrus cloud heightwith a combination of MODIS 1.24- and 1.38-μm channels, *Geophys. Res. Letter*, VOL. 39, L24806, doi:10.1029/2012GL053854, 2012

[202] *Yi, B., **P. Yang**, K. N. Liou, P. Minnis, and J. E. Penner, 2012: Simulation of the global contrail radiative forcing: a sensitivity analysis. *Geophys. Res. Lett.,* 39, L00F03, doi:10.1029/2012GL054042, 2012

[203] ^Bi, L., **P. Yang**, G. W. Kattawar, M. I. Mishchenko, 2013: Efficient implementation of the invariant imbedding T-matrix method and the separation of variables method applied to large nonspherical inhomogeneous particles, *J. Quant. Spectrosc. Radiat. Transfer, 116, 169-183.*

[204] *Cole, B., **P. Yang**, B. A.Baum, J. Riedi, L. C.-Labonnote, F. Thieuleux, and S. Platnick, 2013: Comparison of PARASOL observations with polarized reflectances simulated using different ice habit mixtures, *J. Appl. Meteor. Clim.* 52, 186-196.

[205] **Yang, P**., ^L. Bi, B. A. Baum, K. N. Liou, G. W. Kattawar, M.I. Mishchenko, and *B. Cole, 2013: Spectrally consistent scattering, absorption, and polarization properties of atmospheric ice crystals at wavelengths from 02 to 100 μm. *J. Atmos. Sci*., 70, 330-347.

[206] *Liu, C., R. L. Panetta, **P. Yang**, A. Macke and A. J. Baran, 2013: Modeling the scattering properties of mineral aerosols using concave and fractal polyhedral. *Applied Optics*, 52, 640-652.

[207] *Wang, C., **P. Yang**, S.L. Nasiri, S. Platnick, B. A. Baum, and A. K. Heidinger, X. Liu, 2013: A fast radiative transfer model for visible through shortwave infrared spectral reflectances in clear and cloudy atmospheres, *J. Quant. Spectrosc. Radiat. Transfer, 116, 122-131.*

[208] *Wang, C., **P. Yang**, S. Platnick, A. K. Heidinger, B. A. Baum, T. Greenwald, Z. Zhang and R. E. Holz, 2013: Retrieval of ice cloud properties from AIRS and MODIS observations based on a fast high-spectral-resolution radiative transfer model, *J. Appl. Meteor. Clim.* 52, 710-725.

[209] Liou, K. N., Y. Takano, Q. Yue, and **P. Yang**, 2013: On the radiative forcing of contrail cirrus contaminated by black carbon, *Geophys. Res. Lett.,* 40, 1-7, doi:10.1002/grl.50110.

[210] Liang, F., Y. Cheng, Q. Song, J. Park, and **P. Yang**, 2013: A resampling-based stochastic approximation method for analysis of large geostatistical data, *J. American Statistical Association*, 108, No. 501, 325-339.

[211] ^Bi, L., **P. Yang**, G. W. Kattawar, and M. I. Mishchenko, 2013: A numerical combination of extended boundary condition and invariant imbedding method applied to light scattering by large spheroids and cylinders. *J. Quant. Spectrosc. Radiat. Transfer, 123, 17-22.*

[212] Lin, T.-H.; **P. Yang**; *B. Yi, 2013: Effect of black carbon on dust property retrievals from satellite observations, *J. Appl. Remote Sens*. 7 (1), 073568 (May 03, 2013); doi: 10.1117/1.JRS.7.073568

[213] ^Bi, L., and **P. Yang**, 2013: Modeling of light scattering by biconcave and deformed red blood cells with the invariant imbedding T-matrix method, *J. Biomedical Optics*, 18(5), 055001-1 -- 055001-13.

[214] Ding, S., P**. Yang**, B. A. Baum, A. Heidinger, and T. Greenwald, 2103: Development of a GOES-R Advanced baseline imager solar channel radiance simulator for ice cloud, *J. Appl. Meteor. Clim.* 52, 872-888

[215] *Cho, H.-M., S. L. Nasiri, **P. Yang**, I. Laszlo, X. "Tom" Zhao, 2013: Detection of Optically Thin Mineral Dust Aerosol Layers over the Ocean Using MODIS. *J. Atmos. Oceanic Technol.*, 30, 896–916.

[216] Takano, Y., K. N. Liou, M. Kahnert, and **P. Yang**, 2013: The single-scattering properties of black carbon aggregates determined from the geometric-optics surface-wave approach and the T-matrix method. *J. Quant. Spectrosc. Radiat. Transfer,* 125, 51-56.

[217] Zhou, C., **P. Yang**, A. E. Dessler and F. Liang, 2013: Statistical properties of horizontally oriented plates in optically thick clouds from satellite observations, *IEEE Geoscience and Remote Sensing Lett.,* 10, 986-990.

[218] Zhou, C., M. D. Zelinka, A. E. Dessler, and **P. Yang**, 2013: An Analysis of the Short-Term Cloud Feedback Using MODIS Data. *J. Climate*, **26**, 4803–4815.

[219] Li, J, Q. Ying, *B. Yi, and **P. Yang**, 2013: Role of stabilized Criegee Intermediates in the formation of atmospheric sulfate in eastern United States. *Atmospheric Environment*, 79, 442-447.

[220] Gao, M., **P. Yang**, D. McKee, and G. W. Kattawar, 2013: Mueller matrix holographic method for small particle characterization: theory and numerical studies. *Appl. Opt.,* 52, 5289-5296.

[221] Liou, K. N., Y. Takano, and **P. Yang**, 2013: Intensity and polarization of dust aerosols over polarized anisotropic surfaces. *J. Quant. Spectrosc. Radiat. Transfer,* 127*, 149-157.*

[222] *Sun, B., **P. Yang**, and G. W. Kattawar, 2013: Many-body iterative T-matrix method for large aspect ratio particles. *J. Quant. Spectrosc. Radiat. Transfer,* 127*, 165-175.*

[223] Gao, M., X. Huang, **P. Yang**, and G. W. Kattawar, 2013: Angular distribution of diffuse reflectance from incoherent multiple scattering in turbid media, *Appl. Opt.*, 52, 5869-5879.

[224] *Yi, B., **P. Yang**, B. A. Baum, T. L'Ecuyer, L. Oreopoulos, E. J. Mlawer, A. J. Heymsfield, K.-N. Liou, 2013: Influence of ice particle surface roughening on the global cloud radiative effect, *J. Atmos. Sci*., 70, 2794-2807.

[225] *Liu, C., R. L. Panetta, and **P. Yang**, 2013: The effects of surface roughness on the scattering properties of hexagonal columns with sizes from the Rayleigh to the geometric optics regimes, *J. Quant. Spectrosc. Radiat. Transfer,* 129*, 169-185.*

[226] Garnier, A., J. Pelon, P. Dubuisson, **P. Yang**, M. Faivre, O. Chomette, N. Pascal, P. Lucker, T. Murray, 2013: Retrieval of cloud properties using CALIPSO Imaging Infrared

Radiometer. Part II: Effective Diameter and Ice Water Path. *J. Appl. Meteor. Clim.* 52, 2582-2599.

[227] Gao, M., **P. Yang**, and G. W. Kattawar, 2013: Polarized extinction properties of plates with large aspect ratios. *J. Quant. Spectrosc. Radiat. Transfer,* 131*, 72-81.*

[228] Liu, J., ^L. Bi, **P. Yang**, and G. W. Kattawar, 2014: Scattering of partially coherent electromagnetic beams by water droplets and ice crystals. *J. Quant. Spectrosc. Radiat. Transfer,* 134*, 74-84.*

[229] ^Bi, L., and **P. Yang**, 2014: Accurate simulation of the optical properties of atmospheric ice crystals with invariant imbedding T-matrix method. *J. Quant. Spectrosc. Radiat. Transfer,* 138*, 17-35.*

[230] *Wang, C. X., **P. Yang**, A. Dessler, B. A. Baum, and Y. Hu, 2014: Estimation of the cirrus cloud scattering phase function from satellite observations. *J. Quant. Spectrosc. Radiat. Transfer,* 138*, 36-49.*

[231] Colarco, P. R., E. P. Nowottnick, C. A. Randles, B. Yi, **P. Yang**, K.-M. Kim, J. A. Smith, and C. G. Bardeen, 2014: Impact of radiatively interactive dust aerosols in the NASA GEOS-5 climate model: Sensitivity to dust particle shape and refractive index, *J. Geophys. Res. Atmos.*, 119, 753–786, doi:10.1002/2013JD020046.

[232] *Cole, B. H., **P. Yang**, B. A. Baum, J. Riedi, and L. C.-Labonnote, 2014: Ice particle habit and surface roughness derived from PARASOL polarization measurements, *Atmos. Chem. Phys.*, 14, 3739-3750, doi:10.5194/acp-14-3739-2014.

[233] ^Bi, L., and **P. Yang**, 2014: High-frequency extinction efficiencies of spheroids: rigorous T-matrix solutions and semi-empirical approximations, Optics Express, 22, 10270-10293.

[234] Iwabuchi, H., S. Yamada, S. Katagiri, **P. Yang**, and H. Okamoto, 2014: Radiative and microphysical properties of cirrus cloud inferred from infrared measurements made by the Moderate Resolution Imaging Spectroradiometer (MODIS). Part I: Retrieval Method. *J. Appl. Meteor. Clim.* 53, 1297-1316.

[235] Baum, B. A., **P. Yang**, A. J. Heymsfield, A. Bansemer, B. H. Cole, A. Merrelli, C. Schmitt, and C. Wang, 2014: Ice cloud single-scattering property models with the full phase matrix at wavelengths from 0.2 to 100 μm, *J. Quant. Spectrosc. Radiat. Transfer,* 146*, 123-139.*

[236] ^Yi, B., X. Huang, **P. Yang**, B. A. Baum, and G. W. Kattawar, 2014: Considering polarization in MODIS-based cloud property retrievals by using a vector radiative transfer code, *J. Quant. Spectrosc. Radiat. Transfer,* 146*, 540-548.*

[237] *Sun, B., **P. Yang**, G. W. Kattawar, and L. Bi, 2014: Scattering of 1-D periodic scatter and asymptotic comparison using the many-body iterative T-matrix method, *J. Quant. Spectrosc. Radiat. Transfer,* 146*, 459-467.*

[238] ^Liu, C., R. L. Panetta, **P. Yang**, 2014: Inhomogeneity structure and the applicability of effective medium approximation in calculating light scattering by inhomogeneous particles, *J. Quant. Spectrosc. Radiat. Transfer,* 146*, 331-348.*

[239] *Podowitz, D. I., ^C. Liu, **P. Yang**, and M. A. Yurkin, 2014: Comparison of the pseudo-spectral time domain method and the discretre dipole approximation for light scattering ice spheres, *J. Quant. Spectrosc. Radiat. Transfer,* 146*, 402-409.*

[240] ^Bi, L., **P. Yang**, C. Liu, B. Yi, B. A. Baum, B. van Diedenhoven, H. Iwabuchi, 2014: Assessment of the accuracy of the conventional ray-tracing technique: Implications in remote sensing and radiative transfer involving ice clouds, *J. Quant. Spectrosc. Radiat. Transfer,* 146*, 158-174.*

[241] Liou, K. N., Y. Takano, C. He, **P. Yang**, L. R. Leung, Y. Gu, and W. L. Lee, 2014:

Stochastic parameterization for light absorption by internally mixed BC/dust in snow grains for application to climate models, *J. Geophys. Res. Atmos.*, 119, doi:10.1002/2014JD021665.

[242] ^Yi, B., **P. Yang**, and B. A. Baum, 2014: Impact of pollution on the optical properties of trans-Pacific East Asian dust from satellite and ground-based measurements, *J. Geophys. Res. Atmos.,* 119, 5397–5409, doi:10.1002/ 2014JD021721.

[243] ^Liu, C., R. L. Panetta, and **P. Yang**, 2014: The effective equivalence of geometric irregularity and surface roughness in determining particle singe-scattering properties, *Optics Express*, 22, 23620-23627.

[244] *Liu, C., **P. Yang**, P., Minnis, N. Loeb, S. Kato, A. Heymsfield, and C. Schmitt, 2014: A two-habit model for the microphysical and optical properties of ice clouds, *Atmos. Chem. Phys*., 14, 13719-13737, doi:10.5194/acp-14-13719-2014.

[245] Zhou, C., A. E. Dessler, M. D. Zelinka, **P. Yang**, and T. Wang (2014), Cirrus feedback on interannual climate fluctuations, *Geophys. Res. Lett.*, 41, 9166–9173, doi:10.1002/2014GL062095.

[246] **Yang, P**., K. N. Liou, L. Bi, ^C. Liu, ^B. Yi, and B. A. Baum, 2015: On the radiative properties of ice clouds: Light scattering, remote sensing, and radiation parameterization. *Adv. Atmos. Sci.,* 32(1), 32–63, doi: 10.1007/s00376-014-0011-z.

[247] ^Huang, X., **P. Yang**, G. Kattawar, and K. N. Liou, 2015: Effect of mineral dust aerosol aspect ratio on polarized reflectance, *J. Quant. Spectrosc. Radiat. Transfer,* 151*, 97-109*.

[248] Reichardt, J., S. Reichardt, C. A. Hostetler, P. L. Lucker, T. J. McGee, L. W. Twigg, A. Dörnbrack, M. R. Schoeberl, and **P. Yang**, 2015: Mother-of-pearl cloud particle size and composition from aircraft-based photography of coloration and lidar measurements, *Appl. Opt.* 54, B140-B153.

[249] ^Yi, B., **P. Yang**, A. Dessler, and A. M. da Silva, 2015: Response of aerosol direct radiative effect to the East Asian Summer Monsoon, *IEEE Geosci. Remote Sensing Lett.* 12, 597-600.

[250] ^Bi, L., and **P. Yang**, 2015: Impact of calcification state on the inherent optical properties of Emiliania huxleyi coccoliths and coccolithophores, *J. Quant. Spectrosc. Radiat. Transfer,* 155*,* 10-21.

[251] ^Liu, C., **P. Yang**, S. L. Nasiri, S. Platnick, K. G. Meyer, C. Wang, and S. Ding, 2015: A fast Visible Infrared Imaging Radiometer Suite simulator for cloudy atmospheres, *J. Geophys. Res. Atmos*., 120, doi:10.1002/2014JD022443.

[252] ^Wang, C., **P. Yang**, and X. Liu, 2015: A high-spectral-resolution radiative transfer model for simulating multilayered clouds and aerosols in the infrared spectral region, *J. Atmos. Sci*., 72, 926-942.

[253] Zhou, C., and **P. Yang**, 2015: Backscattering peak of ice cloud particles, *Opt. Express*, 23, 11995-12003.

[254] ^Liu, J, **P. Yang**, and K. Muinonen, 2015: Dust-aerosol optical modeling with Gaussian spheres: Combined invariant-imbedding T-matrix and geometric-optics approach, *J. Quant. Spectrosc. Radiat. Transfer,* 161*, 136-144.*

[255] Heidinger, A. K., Y. Li, B. A. Baum, R. E. Holz, S. Platnick, and **P. Yang**, 2015: Retrieval of cirrus cloud optical depth under day and night conditions from MODSI Collection 6 cloud property data. *Remote Sensing*, 7, 7257-7271.

[256] Bi, L., **P. Yang**, G. W. Kattawar, and M. I. Mishchenko, 2015: Optical tunneling by arbitrary macroscopic three-dimensional objects. *Physical Review A*, 92, 013814-1 -- 013814-8.

[257] Kolokolova, L., H. S. Das, O. Dubovik, T. Lapyonok, and **P. Yang**, 2015: Polarization of cosmic dust simulated with the rough spheroid model. *Planetary and Space Science*, 116, 30-38.

[258] He, C., K. N. Liou, Y. Takano, R. Zhang, M. Levy Zamora, **P. Yang**, Q. Li, and L. R. Leung, 2015: Variation of the radiative properties during black carbon aging: theoretical and experimental intercomparison, *Atmos. Chem. Phys*., 15, 11967-11980.

[259] Barker, H. W., J. N. Cole, J. Li, ^B. Yi, and **P. Yang**, 2015: Estimation of errors in two-stream approximations of the solar radiative transfer equation for cloudy-sky conditions, *J. Atmos. Sci*., 72, 4053-4074.

[260] Li, J., H. Barker, **P. Yang**, and B. Yi, 2015: On the aerosol and cloud phase function expansion moments for radiative transfer simulations, *J. Geophys. Res. Atmos.*, 120, doi:10.1002/2015JD023632.

[261] *Ding, J., **P. Yang**, R. E. Holz, S. Platnick, K. G. Meyer, M. A. Vaughan, Y. Hu, and M. D. King, 2016: Ice cloud backscatter study and comparison with CALIPSO and MODIS satellite data, *Optics Express*, 24, 620-636.

[262] ^Tang, G., **P. Yang**, ^B. Sun, and R. L. Panetta, 2016: Enhancement of the computational efficiency of the near-to-far field mapping in the finite-difference method and ray-by-ray method with the fast multi-pole plane wave expansion approach, *J. Quant. Spectrosc. Radiat. Transfer*, 176, 70-81.

[263] ^Sun, B., G. W. Kattawar, **P. Yang**, and K. F. Ren, 2016: Rigorous 3-D vectorial complex ray model applied to light scattering by an arbitrary spheroid, *J. Quant. Spectrosc. Radiat. Transfer*, 179, 1-10.

[264] Holz, R. E., S. Platnick, K. Meyer, M. Vaughan, A. Heidinger, **P. Yang**, G. Wind, S. Dutcher, S. Ackerman, N. Amarasinghe, F. Nagle, and C. Wang, 2016: Resolving ice cloud optical thickness biases between CALIOP and MODIS using infrared retrievals, *Atmos. Chem. Phys*.,16, 5075-5090, 2016.

[265] Bi, L., and **P. Yang**, Tunneling effects in electromagnetic wave scattering by nonspherical particles: A comparison of the Debye series and physical-geometric optics approximations, *J. Quant. Spectrosc. Radiat. Transfer*, 178, 93-107.

[266] *Zhang, J., L. Bi, ^J. Liu, R. L. Panetta, **P. Yang**, and G. W. Kattawar, 2016: Optical scattering simulation of ice particles with surface roughness modeled using the Edwards-Wilkinson equation, *J. Quant. Spectrosc. Radiat. Transfer*, 178, 325-335.

[267] Panetta, R. L., *J. Zhang, L. Bi, **P. Yang** and ^G. Tang, 2016: Light scattering by hexagonal ice crystals with distributed inclusions, *J. Quant. Spectrosc. Radiat. Transfer*, 178, 336-349.

[268] ^Sun, B., G. W. Kattawar, **P. Yang**, M. S. Twardowski, and J. M. Sullivan, 2016: Simulation of the scattering properties of a chain-forming triangular prism oceanic diatom, *J. Quant. Spectrosc. Radiat. Transfer*, 178, 390-399.

[269] ^Tang, G., **P. Yang**, D. L. Wu, 2016: Sensitivity study of ice crystal optical properties in the 874 GHz submillimeter band, *J. Quant. Spectrosc. Radiat. Transfer*, 178, 416-421.

[270] Brasseur, G. P., M. Gupta, B. E. Anderson, S. Balasubramanian, S. Barrett, D. Duda, G. Fleming, P. M. Forster, J. Fuglestvedt, A. Gettelman, R. N. Halthore, S. D. Jacob, M. Z. Jacobson, A. Khodayari, K.-N. Liou, M. T. Lund, R. C. Miake-Lye, P. Minnis, S. Olsen, J. E. Penner, R. Prinn, U. Schumann, H. B. Selkirk, A. Sokolov, N. Unger, P. Wolfe, H.-W. Wong, D. W. Wuebbles, ^B. Yi, **P. Yang**, and C. Zhou, 2016: Impact of aviation on climate: FAA's Aviation Climate Change Research Initiative (ACCRI) Phase II, *Bulletin of the American Meteorological Society,* 97, 561-583.

[271] Mishchenko, M. I., J. M. Dlugach, M. A. Yurkin, L. Bi, B. Cairns, L. Liu, R. L. Panetta, L. D. Travis, **P. Yang**, and N. T. Zakharova, 2016: First-principles modeling of electromagnetic scattering by discrete and discretly heterogeneous random media, *Physics Reports*, 631, 1-75.

[272] Wang, C., S. Platnick, Z. Zhang, K. Meyer, and **P. Yang**, 2016: Retrieval of ice cloud properties using an optimal estimation algorithm and MODIS infrared observations: 1. Forward model, error analysis, and information content, *J. Geophys. Res. Atmos*., 121, doi:10.1002/2015JD024526.

[273] Wang, C., S. Platnick, Z. Zhang, K. Meyer, G. Wind, and **P. Yang**, 2016: Retrieval of ice cloud properties using an optimal estimation algorithm and MODIS infrared observations: 2. Retrieval evaluation, *J. Geophys. Res. Atmos*., 121, doi:10.1002/2015JD024528.

[274] *Hioki, S., **P. Yang**, B. A. Baum, S. Platnick, K. G. Meyer, M. D. King, and J. Riedi, 2016: Degree of ice particle surface roughness inferred from polarimetric observations, *Atmos. Chem Phys*., 16, 7545-7558.

[275] He, C., Y. Takano, K.-N. Liou, **P. Yang**, Q. Li, and D. W. Mackowski, 2016: Intercomparison of the GOS approach, superposition T-matrix method, and laboratory measurements for black carbon optical properties during aging, *J. Quant. Spectrosc. Radiat. Transfer*, 184, 287-296.

[276] Heinson, Y. W., J. B. Maughan, *J. Ding, A. Chakrabarti, **P. Yang**, C. M. Sorensen, 2016: Q-space analysis of light scattering by ice crystals, *J. Quant. Spectrosc. Radiat. Transfer*, 185, 86-94.

[277] *Hioki, S., **P. Yang**, G. W. Kattawar, and Y. Hu, 2016: Truncation of the scattering phase matrix for vector radiative transfer simulation, *J. Quant. Spectrosc. Radiat. Transfer*, 183, 70-77.

[278] Mishchenko, M. I., I. V. Geogdzhayev, and **P. Yang**, 2016: Expansion of tabulated scattering matrices in generalized spherical functions, *J. Quant. Spectrosc. Radiat. Transfer*, 183, 78-84.

[279] ^Sun, B., G. W. Kattawar, P. Yang, 2016: Radiance and polarization in the diffusion region with an arbitrary scattering phase matrix. J. *Quant. Spectrosc. Radiat. Transfer*, 183, 154-161.

[280] Liu, X., Q. Yang, H. Li, Z. Jin, W. Wu, S. Kizer, D. K. Zhou, and **P. Yang**, 2016: Development of a fast accurate PCRTM radiative transfer model in the solar region. *Appl. Opt*, 55, 8236-8247.

[281] Shahabadi, M. B., Y. Huang, L. Garand, S. Heilliette, and **P. Yang**, 2016: Validation of a weather forecast model at radiance level against satellite observations allowing quantification of temperature, humidity, and cloud-related biases, *J. Adv. Model. Earth Syst*., 8, 1453–1467, doi:10.1002/2016MS000751

[282] Schmitt, C. G., M. Schnaiter, A. J. Heymsfield, **P. Yang**, E. Hirst, and A. Bansemer, 2016: The microphysical properties of small ice particles measured by the small ice detector-3 probe during the MACPEX field campaign, *J. Atmos. Sci*., 73, 4775-4791.

[283] ^Yi, B., **P. Yang**, Q. Liu, P. van Delst, S.-A. Boukabara, and F. Weng, 2016: Improvements on the ice cloud modeling capabilities of the Community Radiative Transfer Model, *J. Geophys. Res. Atmos*., 121, doi:10.1002/ 2016JD025207.

[284] Platnick, S., K. G. Meyer, M. D. King, G. Wind, N. Amarashinghe, B. Marchant, G. T. Arnold, Z. Zhang, P. A. Hubanks, R. E. Holz, **P. Yang**, W. L. Ridgeway, and J. Riedi, 2017: The MODIS cloud optical and microphysical products: Collection 6 updates and

examples from Terra and Acqua, *IEEE Transactions on Geosciences and Remote Sensing*, 55, 502–525, doi:10.1109/TGRS.2016.2610522.

[285] Bi, L., and **P. Yang**, 2017: Improved ice particle optical property simulations in the ultraviolet to far-infrared regime, *J. Quant. Spectrosc. Radiat. Transfer*, 189, 228-237.

[286] *Ding, J., L. Bi, **P. Yang**, G. W. Kattawar, F. Weng, Q. Liu, and T. Greenwald, 2017: Single-scattering properties of ice particles in the microwave regime: temperature effect on the ice refractive index with implications in remote sensing, *J. Quant. Spectrosc. Radiat. Transfer*, 190, 26-27.

[287] *Xu, G., ^B. Sun, S. D. Brooks, **P. Yang**, G. W. Kattawar, X. Zhang, 2017: Modeling the inherent optical properties of aquatic particles using an irregular hexahedral ensemble, *J. Quant. Spectrosc. Radiat. Transfer*, 191, 30-39.

[288] *Ding, J., **P. Yang**, G. W. Kattawar, M. D. King, S. Platnick, and K. G. Meyer, 2017: Validation of quasi-invariant ice cloud radiative quantities with MODIS satellite-based cloud property retrievals, *J. Quant. Spectrosc. Radiat. Transfer*, 194, 47-57.

[289] Saito M., H. Iwabuchi, **P. Yang**, ^G. Tang, M. D. King and M. Sekiguchi, 2017: Ice particle morphology and microphysical properties of cirrus clouds inferred from combined CALIOP-IIR measurements, *J. Geophys. Res. Atmos*., 122, doi:10.1002/2016JD026080.

[290] ^Yi, B., A. D. Rapp, **P. Yang**, B. A. Baum, and M. D. King, 2017: A comparison of Aqua MODIS ice and liquid water cloud physical and optical properties between collection 6 and collection 5.1: Cloud radiative effects, *J. Geophys. Res. Atmos*., 122, 4550-4564, doi:10.1002/2016JD025654.

[291] ^Yi, B., A. D. Rapp, **P. Yang**, B. A. Baum, and M. D. King, 2017: A comparison of Aqua MODIS ice and liquid water cloud physical and optical properties between collection 6 and collection 5.1: Pixel-to-pixel comparisons, *J. Geophys. Res. Atmos*., 122, 4528-4549, doi:10.1002/ 2016JD025586.

[292] ^Sun, B., G. W. Kattawar, **P. Yang**, and E. Mlawer, 2017: An improved small-angle approximation for forward scattering and its use in a fast two-component radiative transfer method, *J. Atmos. Sci*., 74, 1959-1987.

[293] ^Tang, G., R. L. Panetta, **P. Yang**, G. W. Kattawar, and P.-W. Zhai, 2017: Effects of ice crystal surface roughness and air bubble inclusions on cirrus cloud radiative properties from remote sensing perspective, *J. Quant. Spectrosc. Radiat. Transfer*, 195, 119-131.

[294] ^Sun, B., **P. Yang**, G. W. Kattawar, and X. Zhang, 2017: Physical-geometric optics method for large size faceted particles, *Optics Express*, 25, 24044-24060.

[295] ^Stegmann, P., and **P. Yang**, 2017: A regional, size-dependent, and causal effective medium model for Asian and Saharan mineral dust refractive index spectra, *J. Aerosol Sci.*, 114, 327-341.

[296] ^Tang, G. L., **P. Yang**, P. G. Stegmann, R. L. Panetta, L. Tsang, and B. Johnson, 2017: Effect of particle shape, density, and inhomogeneity on the microwave optical properties of graupel and hailstones, *IEEE Trans. Geosci. Remote Sens., 55, 6366-6378*.

[297] Lee, J., N. C. Hsu, A. M. Sayer, C. Bettenhusen, and **P. Yang**, 2017:AERONET-based nonspherical dust optical models and effects on the VIIRS deep blue/SOAR over water aerosol product, *J. Geophys. Res. Atmos.*, 122, 10,384–10,401. https://doi.org/10.1002/2017JD027258.

[298] He, C., Y. Takano, K.-N. Liou, **P. Yang**, Q. Li, and F. Chen, 2017: Impact of snow grain shape and black carbon-snow internal mixing on snow optical properties: parameterizations for climate models. *J. Climate*, 30, 10019-10035.

[299] Mishchenko, M. I., G. Videen, and **P. Yang**, 2017: Extinction by a homogeneous spherical particle in an absorbing medium, *Optics Letters*, 42, 4873-4876.

[300] *Xu, G., P. G. Stegmann, S. D. Brooks, and **P. Yang**, 2017: Modeling the single and multiple scattering properties of soot-laden mineral dust aerosols, *Optics Express*, 25, A990-A1008.

[301] ^Sun, B., **P. Yang**, G. W. Kattawar, and M. I. Mishchenko, 2017: On Babinet's principle and diffraction associated with an arbitrary particle, *Optics Letters*, 42, 5026-5029.

[302] Zenker, J., K. N. Collier, G. Xu, **P. Yang**, E. J. T. Levin, P. J. DeMott, and S. D. Brooks, 2017: Using depolarization to quantify ice nucleating particle concentrations: a new method, *Atmo. Meas. Tech*., 10, 4639-4657.

[303] *Kuo, C.-P., **P. Yang**, X. Huang, D. Feldman, M. Flanner, C. Kuo, E. J. and Mlawer, 2017: Impact of multiple scattering on longwave radiative transfer involving clouds. *Journal of Advances in Modeling Earth Systems*, 9. https://doi.org/10.1002/2017MS001117

[304] Mishchenko, M. I., and **P. Yang**, 2018: Far-field Lorenz-Mie scattering in an absorbing host medium: theoretical formalism and FORTRAN program, *J. Quant. Spectrosc. Radiat. Transfer*, 205, 241-252.

[305] He, C., Liou, K.-N., Takano, Y., **P. Yang**, L. Qi, and F. Chen, 2018: Impact of grain shape and multiple black carbon internal mixing on snow albedo: Parameterization and radiative effect analysis. *Journal of Geophysical Research: Atmospheres*, 123. https://doi.org/10.1002/2017JD027752

[306] Li, R., ^G. Tang, *J. Ding, T. Logan, S. D. Brooks, D. R. Collins, **P. Yang** and G. W. Kattawar, 2018: Laboratory measurements of light scattering properties of kaolinite dust at 532 nm. *Aerosol Science and Technology*, DOI: 10.1080/02786826.2018.1444729

[307] Iwabuchi, H., N. S. Putri, M. Saito, Y. Tokoro, M. Skiguchi, **P. Yang**, and B. A. Baum, 2018: Cloud property retrieval from multiband infrared measurements by Himawari-8, *J. Meteor. Soc. Japan*, 96B, 27-42.

[308] ^Stegmann, P. G., ^G. Tang, **P. Yang** and B. T. Johnson, 2018: A stochastic model for density-dependent microwave snow and graupel scattering coefficients of the NOAA JCSDA community radiative transfer model. *J. Quant. Spectrosc. Radiat. Transfer*, 211, 9-24.

[309] Loeb, N. G., **P. Yang**, F. G. Rose, G. Hong, S. Sun-Mack, P. Minnis, S. Kato, S.-H Ham, W. L. Smith Jr., *S. Hioki, and ^G. Tang, 2018: Impact of ice microphysics on satellite cloud retrievals and broadband flux radiative transfer model calculations. *J. Climate*, 31, 1851-1864.

[310] Huang, X. L., X. H. Chen, M. Flanner, **P. Yang**, D. Feldman, and C. Kuo, 2018: Improved representation of surface spectral emissivity in a global climate model and its impact on simulated climate, *J. Climate*, 31, 3711-3727.

[311] ^Tang, G., **P. Yang**, G. W. Kattawar, X. Huang, E. J. Mlawer, B. A. Baum, and M. D. King, 2018: Improvement of the simulation of cloud longwave scattering in broadband radiative transfer models. *J. Atmos. Sc*., 75, 2217-2233.

[312] Poulin, C., X. Zhang, **P. Yang**, and Y. Huot, 2018: Diel variations of the attenuation, backscattering and absorption coefficients of four phytoplankton species and comparison with spherical, coated spherical and hexahedral particle optical models. *J. Quant. Spectrosc. Radiat. Transfer*, 217, 288-304.

[313] Song, Q., Z. Zhang, H. Yu, S. Kato, **P. Yang**, P. Colarco, L. A. Remer, and C. L. Ryder, 2018: Net radiative effects of dust in the tropical North Atlantic based on integrated satellite observations and in situ measurements, *Atmos. Chem. Phys*., 18, 11303-11322.

[314] *Wang, Y., S. Hioki, **P. Yang**, M. D. King, L. Di Girolamo, D. Fu, and B. A. Baum, 2018: Inference of an Optimal Ice Particle Model through Latitudinal Analysis of MISR and MODIS Data, *Remote Sensing*, 2018, 10, 1981; doi:10.3390/rs10121981

[315] **Yang, P**., *S. Hioki, ^M. Saito, *C.-P. Kuo, B. A. Baum, K.-N. Liou, 2018: A review of ice cloud optical property models for satellite remote sensing, *Atmosphere* 2018, 9, 499; doi:10.3390/atmos9120499

[316] ^Sun, B., G. W. Kattawar, **P. Yang**, and X. Zhang, 2018: A brief review of Mueller matrix calculations associated with oceanic particles, *Special Issue "Outstanding Topics in Ocean Optics" in Applied Sciences*, 8, 2686; doi:10.3390/app8122686

[317] **Yang, P**., ^P. Stegmann, and M. I. Mishchenko, 2018: Preface: Electromagnetic and light scattering by nonspherical particles XVII, *J. Quant. Spectrosc. Radiat. Transfer*, 221, A1-A3.

[318] ^Stegmann, P. G., ^B. Sun, *J. Ding, **P. Yang**, and X. Zhang, 2019: Study of the Effects of Phytoplankton Morphology and Vertical Profile on Lidar Attenuated Backscatter and Depolarization Ratio, *J. Quant. Spectrosc. Radiat. Transfer*, 225, 1-15

[319] **Yang, P.**, *J, Ding, R. L. Panetta, K.-N. Liou, G. W. Kattawar, M. I. Mishchenko, 2019: On the convergence of numerical computations for both exact and approximate solutions for electromagnetic scattering by nonspherical dielectric particles, *Progress In Electromagnetics Research*, 164, 27-61 (invited paper).

[320] ^Saito, M., **P. Yang**, Y. Hu, X. Liu, N. Loeb, W. L. Smith Jr., and P. Minnis, 2019: An efficient method for microphysical property retrievals in vertically inhomogeneous marine water clouds using MODIS–CloudSat measurements , *Journal of Geophysical Research: Atmospheres*, 124. https://doi.org/10.1029/2018JD029659

[321] Gouesbet, G., **P. Yang**, F. Onofri, 2019: Afterword. Laser-light interactions with particles (LIP), 2018, *J. Quant. Spectrosc. Radiat. Transfer*, 225, 45-49.

[322] Panetta, R. L., *S. Zhai, and **P. Yang**, 2019: Internal electromagnetic waves, energy trapping, and energy release in simple time-domain simulations of single particle scattering, *J. Quant. Spectrosc. Radiat. Transfer*, 228, 27-46.

[323] ^Saito, M., **P. Yang**, N. Loeb, and S. Kato, 2019: A parameterization of surface snow albedo based on a two-layer snow model in conjunction with a mixture of grain habits, *J. Atmos. Sci*., 76, 1419-1436.

[324] ^Saito, M., and **P. Yang**, 2019: Oriented ice crystals: A single-scattering property database for applications to lidar and optical phenomenon simulations. *J. Atmos. Sci*., 76, 2635-2652.

[325] *Zhai, S., R. L. Panetta, **P. Yang**, 2019: Improvements in the computational efficiency and convergence of the invariant imbedding T-matrix method for spheroids and hexagonal prisms, Optics Express, 27, A1441-A1457.

[326] *Wang, Y., **P. Yang**, S. Hioki, M. D. King, B. A. Baum, L. Di Girolamo, D. Fu, 2019: Ice cloud optical thickness, effective radius, and ice water path inferred from fused MISR and MODIS measurements based on a pixel-level optimal ice particle roughness model, *J. Geophys. Res. Atmos.*, 124, 12126-12140, https://doi.org/10.1029/2019JD030457

[327] *Ding, J., **P. Yang**, M. D. King, S. Platnick, X. Liu, K. Meyer, and C. Wang, 2019: A fast vector radiative transfer model for the atmosphere-ocean coupled system, *J. Quant. Spectrosc. Radiat. Transfer,* 239, https://doi.org/10.1016/j.jqsrt.2019.106667
[328] *Ren, T., **P. Yang**, G. Tang, X. Huang, and E. Mlawer, 2020: Improved delta-Eddington approximation for optically thin clouds, *J. Quant. Spectrosc. Radiat. Transfer, 240,* https://doi.org/10.1016/j.jqsrt.2019.106694
[329] Zhao, Y. C. Poulin, D. McKee, L. Hu, J. Agagliate, **P. Yang**, X. Zhang, 2020: A closure study of ocean inherent optical properties using flow cytometry measurements,*J. Quant. Spectrosc. Radiat. Transfer,* 241, https://doi.org/10.1016/j.jqsrt.2019.106730
[330] *Kuo, C.-P., **P. Yang**, X. Huang, Y.-H. Chen, and G. Liu, 2020: Assessing the accuracy and efficiency of longwave radiative transfer models involving scattering effect with cloud optical property parameterizations, *J. Quant. Spectrosc. Radiat. Transfer, 240,* https://doi.org/10.1016/j.jqsrt.2019.106683
[331] Bi, L., M. I. Mishchenko, J. Wang, and **P. Yang**, 2020: Preface-Electromagnetic and light scattering by nonspherical particles XVIII, *J. Quant. Spectrosc. Radiat. Transfer, 245,* 106820.
[332] ^Ding, J., **P. Yang**, M. I Mishchenko, and R. Nevels, 2020: Identify the limits of geometric optics ray tracing by numerically solving the vector Kirchhoff integral, *Optics Express*, 28(7) 10670-10682.
[333] Coy, J. J., *A. Bell, **P. Yang**, and D. L. Wu, 2020: Sensitivity analyses for the retrievals of ice cloud properties from radiometric and polarimetric measurements in sub-mm/mm and infrared bands. *Journal of Geophysical Research: Atmospheres*, 125, e2019JD031422. https://doi.org/10.1029/2019JD031422.
[334] ^Ren, T., **P. Yang**, C. Schumacher, X. Huang, and W. Lin, 2020: Impact of cloud longwave scattering on radiative fluxes associated with the Madden-Julian Oscillation in the Indian Ocean and Maritime Continent. *Journal of Geophysical Research: Atmospheres*, 125, e2020JD032591. https://doi.org/10.1029/2020JD032591.
[335] Saito, M., **P. Yang**, A. K. Heidinger, and Y. Li, 2020: An improved beta method for ice cloud property retrievals: theory. *J. Geophys. Res.-Atmospheres*, 125, e2019JD031863. https://doi.org/10.1029/2019JD031863
[336] Saito, M., **P. Yang**, X. Huang, H. E. Brindley, M. G. Mlynczak, and B. H. Kahn, 2020: Spaceborne middle- and far-infrared observations improving nighttime ice cloud property retrievals. *Geophysical Research Letters*, 47, e2020GL087491. https://doi.org/10.1029/2020GL087491.
[337] Bantges, R. J., Brindley, H. E., Murray, J. E., Last, A. E., Fox, C., Fox, S., Harlow, C., O'Shea, S. J., Bower, K. N., Baum, B. A., **Yang, P.**, and Pickering, J. C., 2020: A test of the ability of current bulk optical models to represent the radiative properties of cirrus cloud across the mid-and far-infrared, *Atmos. Chem. Phys*., 20, 12889-12903, https://doi.org/10.5194/acp-20-12889-2020
[338] Chen, Y.-H., Huang, X., **Yang, P.**, *Kuo, C.-P., & Chen, X., 2020: Seasonal dependent impact of ice cloudl ongwave scattering on the polar climate. *Geophysical Research Letters*,47, e2020GL090534, https://doi.org/10.1029/2020GL090534
[339] Minnis, P., S. Sun-Mack ; Y. Chen ; F.-L.Chang ; C. R. Yost ; W. L. Smith ; P. W. Heck ; R. F. Arduini ; S. T. Bedka ; Y.Yi ; G. Hong ; Z. Jin ; D. Painemal ; R. Palikonda ; B. R. Scarino ; D. A. Spangenberg ; R. A. Smith ; Q. Z. Trepte ; **P. Yang** ; Y. Xie, 2021: CERES MODIS Cloud Product Retrievals for Edition 4--Part I: Algorithm Changes,

IEEE Transactions on Geoscience and Remote Sensing, 59, 2744-2780, doi: 10.1109/TGRS.2020.3008866.

[340] *Gu, B., ^Ren, T., Kuo, C.P., **Yang, P.**, & Bowman, K., 2021: Global impact of cloud longwave scattering in an atmosphere-only general circulation model simulation. *Journal of Geophysical Research: Atmospheres*, 126, e2020JD033968. https://doi.org/10.1029/2020JD033968

[341] Carnier, A., J. Pelon, N. Pascal, M. A. Vaughan, P. Dubuisson, **P. Yang**, and D. L. Mitchell, 2021: Version 4 CALIPSO Imaging Infrared Radiometer ice and liquid water cloud microphysical properties – Part I: The retrieval algorithms, Atmos. Meas. Tech., 14, 3253-3276.

[342] Carnier, A., J. Pelon, N. Pascal, M. A. Vaughan, P. Dubuisson, **P. Yang**, and D. L. Mitchell, 2021: Version 4 CALIPSO Imaging Infrared Radiometer ice and liquid water cloud microphysical properties – Part II: Results over oceans, Atmos. Meas. Tech., 14, 3277-3299.

[343] Saito, M., **P. Yang**, J. Ding, and X. Liu, 2021: A comprehensive database of the optical properties of irregular aerosol particles for radiative transfer simulations, J. Atmos. Sci., 78, 2089-2111, https://doi.org/10.1175/JAS-D-20-0338.1

[344] *Wang, Y., **P. Yang**, M. D. King, and B. A. Baum, 2021: Optical property model for cirrus clouds based on airborne multi-angle polarization observations. Remote Sensing, *13*, 2754; https://doi.org/10.3390/rs13142754

[345] *Wei, J., T. Ren, T., **P. Yang**, S. F. DiMarco, and E. Mlawer, 2021: An improved ocean surface albedo computational scheme: Structure and performance. Journal of Geophysical Research: Oceans, 126, e2020JC016958. https://doi.org/10.1029/2020JC016958.

[346] Saito, M., and **P. Yang**, 2021: Advanced bulk optical models linking the backscattering and microphysical properties of mineral dust aerosol. Geophysical Research Letters, 48, e2021GL095121. https://doi. org/10.1029/2021GL095121.

[347] ^Ding, J., L. Wang, P. Brown, and **P. Yang**, 2021: Radiative transfer modeling of an SN 1987A Light Echo – AT 2019xis, The Astrophysical Journal, 919:104, https://doi.org/10.3847/1538-4357/ac1069

[348] ^Ren, T., *D. Li, *J. Muller, and **P. Yang**, 2021: Sensitivity of radiative flux simulations to ice cloud parameterization over the equatorial western Pacific Ocean region, J. Atmos. Sci., 78, 2549-2571, https://doi.org/10.1175/JAS-D-21-0017.1

[349] *Okeudo, N., ^J. Ding, **P. Yang**, and R. Saravanan, 2022: Edge effect correction formula for superspheroids using the Debye series, Optics Express, 30, 146-165.

[350] ^Ren, T., **P. Yang,** *J. Wei, X. Huang, and H, Sang, 2022, Performance of Cloud 3D Solvers in Ice Cloud Shortwave Radiation Closure Over the Equatorial Western Pacific Ocean, Journal of Advances in Modeling Earth Systems, http://doi.org/10.1029/2021MS002754

[351] Chen, X., Wang, J., Gomes, J., Dubovik, O., **Yang, P.**, & Saito, M. (2022). Analytical prediction of scattering properties of spheroidal dust particles with machine learning. Geophysical Research Letters, 49, e2021GL097548. https://doi.org/10.1029/2021GL097548

[352] Peterson, C. A., X. Huang, X. Chen, and **P. Yang**, 2022: Synergistic use of far- and mid-infrared spectral radiances for satellite-based detection of polar ice clouds over ocean. Journal of Geophysical Research: Atmospheres, 127, e2021JD035733. https://doi.org/10.1029/2021JD035733

[353] *Zhang, Y., J. Ding, **P. Yang**, and R. Lee Panetta, 2022: Vector spherical wave function truncation in the invariant imbedding T-matrix method, Optics Express, 30, 30020-30037.

[354] Saito, M., and **P. Yang**, 2022: Generalization of atmospheric nonspherical particle size: interconversions of size distributions and optical equivalence. J. Atmos. Sci., 39, 3333-3349.
[355] Ding, J. C., **P. Yang**, 2023: Tangent-linear and adjoint models for the transfer of polarized radiation, J. Atmos. Sci., 80, 73-89, https://doi.org/10.1175/JAS-D-22-0112.1
[356] Minnis, P.; Sun-Mack, S.; Smith, W.L., Jr.; Trepte, Q.Z.; Hong, G.; Chen, Y.; Yost, C.R.; Chang, F.-L.; Smith, R.A.; Heck, P. W., and **P. Yang**, 2023: VIIRS Edition 1 Cloud Properties for CERES, Part 1: Algorithm Adjustments and Results. Remote Sens. 2023, 15, 578. https://doi.org/10.3390/rs15030578
[357] Ren, T., **P. Yang**, K. Garrett, Y. Ma, J. Ding, and *J. Coy, 2023: A microphysics-scheme-consistent snow optical parameterization for the community radiative transfer model, Monthly Weather Review,151, 383-402, DOI: https://doi.org/10.1175/MWR-D-22-0145.1
[358] *Li, D., M. Saito, and **P. Yang**, 2023: Time-dependent systematic biases in inferring ice cloud properties from geostationary satellite observations, Remote Sensing, 2023, 15, 855. https://doi.org/10.3390/rs15030855
[359] Marquis, J. W., E. K. Dolinar, A. Garnier, J. R. Campbell, B. C. Ruston, **P. Yang**, and J. Zhang, 2023: Estimating the Impact of Assimilating Cirrus Cloud–Contaminated Hyperspectral Infrared Radiances for Numerical Weather Prediction, *J. Atmos. and Ocean. Technol.*, 40, 327-340, DOI: 10.1175/JTECH-D-21-0165.1
[360] Ding, J., **P. Yang**, L. Wang, E. Oran, N. G. Loeb, W. L. Smith Jr., & P. Minnis, 2023: Quantification of global cloud properties with use of spherical harmonic functions. Earth and Space Science, 10, e2022EA002718. https://doi.org/10.1029/2022EA002718
[361] Zhang, Y.*, J. Ding, **P. Yang**, G. Videen, 2023: Evaluating the accuracy of single-scattering computations by the geometric optics approximation using Platonic solids, *J. Quant. Spectros. Rad. Transfer*, 303 (2023), 108591, DOI:10.1016/j.jqsrt.2023.108591
[362] Yorks, J. E., Wang, J., McGill, M. J., Follette-Cook, M., Nowottnick, E. P., Reid, J. S., Colarco, P. R., Zhang, J., Kalashnikova, O., Yu, H., Marenco, F., Santanello, J. A., Weckwerth, T. M., Li, Z., Campbell, J. R., **Yang, P**., Diao, M., Noel, V., Meyer, K. G., Carr, J. L., Garay, M., Christian, K., Bennedetti, A., Ring, A. M., Crawford, A., Pavolonis, M. J., Aquila, V., Kim, J., and Kondragunta, S., 2023: A SmallSat Concept to Resolve Diurnal and Vertical Variations of Aerosols, Clouds, and Boundary Layer Height, *Bulletin of the American Meteorological Society,*, E815–E836, https://doi.org/10.1175/BAMS-D-21-0179.1
[363] Ding, J., **Yang, P.**, Lemmon, M. T., and Zhang, Y. (2023). Simulations of halos produced by carbon dioxide ice crystals in the Martian atmosphere. Geophysical Research Letters, 50, e2023GL103457. https://doi.org/10.1029/2023GL103457
[364] Ding, J., Yang, P., and Videen, G., 2023: On the relation between ice-crystal scattering phase function at 180° and particle size: implication to lidar-based remote sensing of cirrus clouds, Optics Express, 31, 18680-18690, https://doi.org/10.1364/OE.491395.
[365] Cikota, A., Ding, J., Wang, L., Baade, D., Cikota, S., Hoflich, P., Maund, J., & **Yang, P**. (2023). An Independent Determination of the Distance to Supernova SN 1987A by Means of the Light Echo AT 2019xis. *ASTROPHYSICAL JOURNAL LETTERS*. 949(1), l9-L9. DOI 10.3847/2041-8213/acd37c
[366] Hu Y, Lu X, Zeng X, Gatebe C, Fu Q, **Yang P**, Weimer C, Stamnes S, Baize R, Omar A, Creary G, Ashraf A, Stamnes K, and Huang Y (2023), Linking lidar multiple scattering profiles to snow depth and snow density: an analytical radiative transfer analysis and the

implications for remote sensing of snow. Front. Remote Sens. 4:1202234. doi: 10.3389/frsen.2023.120223

[367] Saito, M., & **Yang, P**. (2023). Quantifying the impact of the surface roughness of hexagonal ice crystals on backscattering properties for lidar-based remote sensing applications. Geophysical Research Letters, 50, e2023GL104175. https://doi.org/10.1029/2023GL104175

[368] Fan, C., Chen, Y.-H., Chen, X., Lin, W., **Yang, P**., & Huang, X. (2023). A refined understanding of the ice cloud longwave scattering effects in climate model. Journal of Advances in Modeling Earth Systems, 15, e2023MS003810. https://doi.org/10.1029/2023MS003810

[369] Ren, T., **Yang, P.,** Loeb, N. G., Smith, W. L., Jr., & Minnis, P. (2023). On the consistency of ice cloud optical models for spaceborne remote sensing applications and broadband radiative transfer simulations. *Journal of Geophysical Research-Atmospheres*, 128, e2023JD038747. https://doi.org/10.1029/2023JD038747

[370] Ren, T., **P. Yang**, X. Huang, X. Chen, Z. Shen, 2023: Enhanced cloud top longwave radiative cooling due to the effect of horizontal radiative transfer in the stratocumulus to trade cumulus transition regime, *Geophysical Research Letters*, 50, e2023GL106076. https://doi.org/10.1029/2023GL106076

[371] **Yang, P.**, and G. Kattawar, 2023: Peregrinations on the study of the optical properties of nonspherical particles. Texas J. of Sci., 75(1), DOI 10.32011/txjsci_75_1_TDS (invited article from the 2011 and 2022 Texas Academy of Science *Texas Distinguished Scientists*)

[372] Ding, J., **P. Yang**, 2023: Lorenz-Mie theory-type solution for light scattering by spheroids with small-to-large size parameters and aspect ratios. *Optics Express*, 31, 40937-40951, https://doi.org/10.1364/OE.505416.

[373] *Li, D., M. Saito, **P. Yang**, N. G. Loeb, W. L. Smith and P. Minnis, 2023: On the Scattering-Angle Dependence of the Spectral Consistency of Ice Cloud Optical Thickness Retrievals Based on Geostationary Satellite Observations, *IEEE Transactions on Geoscience and Remote Sensing*, 61, 4108012, doi: 10.1109/TGRS.2023.3331970.

[374] *Wei, J., Ren, T., **Yang, P**., DiMarco, S. F., & Huang, X. (2023). Sensitivity of Arctic surface temperature to including a comprehensive ocean interior reflectance to the ocean surface albedo within the fully coupled CESM2. Journal of Advances in Modeling Earth Systems, 15, e2023MS003702. https://doi.org/10.1029/2023MS003702

[375] *Coy, J. J., M. Saito, **P. Yang**, X. Liu and Y. Hu, 2024: A Robust Ice Cloud Optical Property Model for Lidar-Based Remote Sensing Applications, *IEEE Geoscience and Remote Sensing Letters*, vol. 21, pp. 1-5, 2024, Art no. 1000405, doi: 10.1109/LGRS.2023.3341506.

[376] Zheng, J., Zhang, Z., DeSouza-Machado, S., Ryder, C. L., Garnier, A., Di Biagio, C., **Yang, P.**, Ellsworth, J. W., Yu, H., Barreto, A., Gozalez, M. Y. (2024). Assessment of dust size retrievals based on AERONET: A case study of radiative closure from visible-near-infrared to thermal infrared. *Geophysical Research Letters*, *51*, e2023GL106808. https://doi.org/10.1029/2023GL106808

[377] *Zhang, Y., Saito, M., **Yang, P.,** Schuster, G., & Trepte, C. (2024). Sensitivities of spectral optical properties of dust aerosols to their mineralogical and microphysical properties. Journal of Geophysical Research: Atmospheres, 129, e2023JD040181. https://doi.org/10.1029/2023JD040181

[378] *Mast, J., and **P. Yang**, (2024). Sensitivity, Uncertainty, Information Content, and

Channel Selection for Hyperspectral Reflective Solar Retrievals of Cirrus Cloud Properties. *IEEE Transactions on Geoscience and Remote Sensing*, 64, 4105413, doi: 10.1109/TGRS.2024.3413040

[379] *Wang, S., Ren, T., **Yang, P.**, Saito, M., & Brindley, H. E. (2024). Improved temperature-dependent ice refractive index compilation in the far-infrared spectrum. Geophysical Research Letters, 51, e2024GL110176. https://doi.org/10.1029/2024GL110176

[380] Ren, T., **Yang, P**., Huang, X., & Iwabuchi, H. (2024). Light transfers through a Koch shape cloud. Geophysical Research, Letters, 51, e2024GL110469. https://doi.org/10.1029/2024GL110469

[381] Wu, D. L., J. Gong, W. R. Deal, W. Gaines, C. M. Cooke, G. De Amici, P. Pantina, Y. Liu, **P. Yang**, P. Eriksson, and R. Bennartz (2024). Remote sensing of ice cloud properties with millimeter and submillimeter-wave polarimetry, IEEE Journal of Microwaves, 4 (4), 847-857, DOI: 10.1109/JMW.2024.3487758

[382] ^Wei, J., **Yang, P**., & Fu, Q. (2024). Boreal winter Hadley Cell contraction in response to the incorporation of a comprehensive ocean surface albedo in CESM2. Journal of Geophysical Research: Atmospheres,129(23), e2024JD041948.https://doi.org/10.1029/2024JD041948

[383] *Zhang, Y., P. Yang, M. Gao, and X. Zhang (2025): Optical properties simulated for oceanic particles with nonspherical core-shell morphologies. *J. Quant. Spectrosc. Radiat. Transfer,* 338, 109400*,* https://doi.org/10.1016/j.jqsrt.2025.109400

Selected Conference Presentations and Proceeding Publications (Total: ~500)

Yang, P., M. Saito, 2018: An update on a two-habit ice cloud model and a two-layer snow model for optical property simulation, Earth Radiation Budget Workshop, Boulder, CO, Sep 10-13, 2018

Yang, P., and N. Loeb, 2018: Consistency of ice cloud models in forward retrieval and radiative forcing assessment, MODIS/VIIRS Science Team Meeting, Silver Spring, MD, Oct 15-19.

Yang, P, J. Ding, G. Tang, M. D. King, S. Platnick, K. G. Meyer, and E. J. Mlawer, 2017: Applications of the similarity relations in radiance transfer to remote sensing implementation and flux calculation, 2017 American Geophysical Union Fall Meeting, New Orleans, LA.

Yang, P and K. N. Liou, 2018: A review of the optical properties of atmospheric ice crystals and downstream applications: History and recent advances, American Meteorological Society 15th Conference on Cloud Physics/15th Conference on Atmospheric Radiation, July 9-13, Vancouver, Canada (Invited talk).

Yang, P., M. Saito, J. Ding, S. Hioki, C. P. Kuo, and B. A. Baum, 2018: Advanced radiative transfer capabilities in support of far-infrared based remote sensing of ice clouds, aerosols and snow, 1st Workshop on the Far-infrared Outgoing Radiation Understanidng and Monitoring (FORUM) mission (FORUM), 23-25 October 2018, Florence, Italy.

Yang, P., M. Saito, J. Ding, P. Stegmann, C. A. Hostetler, X. Liu, and C. Trepte, 2019: Dust Aerosol Optical Properties for Applications to Lidar and Polarimetric Retrievals. AMS 99th Annual Meeting, Phoenix, AZ, 6-10 January 2019.

Yang, P., J. Ding, and M. Saito, 2019: Light scattering and radiative transfer simulations in support of CRTM. 17th JCSDA Technical Review Meeting and Science Workshop, 29-31 May 2019, NASA Headquarters, Washington, DC.

Yang, P., and M. Mishchenko, 2020: Single/multiple Scattering of Light by Particles: Fundamentals and Applications in Atmospheric Research" as **a NASA Hyperwall Presentation at the American Association for the Advancement of Science (AAAS) Meeting,** February 15, 2020, Seattle, WA.

Yang, P., J. Ding, M. Saito, J. Coy, R. L. Panetta, Simulations of the optical properties of nonspherical dielectric particles in the atmosphere, International Geoscience and Remote Sensing Symposium (IEEE/IGARSS), Brussels, Belgium, July 12-16, 2021 (Virtual).

Yang, P., M. Saito, J. Ding, X. Liu, Optical properties of dust aerosol particles: Theoretical computations and applications (**invited talk**), The 102nd American Meteorological Society (AMS) Annual meeting (virtual), January 24-27, 2022.

Yang, P., and G. W. Kattawar, Light Scattering by Non-spherical Atmospheric Particles: Brief History, Recent Advances and Applications, (**Keynote talk**), International Radiation Symposium, Thessaloniki, Greece, July 4-8, 2022.

Yang, P., J. Ding, K. Meyer, K. Knobelspiesse, and S. Gassó, 2023: Radiative Transfer of Polarized Light in the Atmosphere and Oceans: Techniques and Remote Sensing Applications. International Geoscience and Remote Sensing Symposium (IGARSS), Pasadena, CA, 16-21 July.

Ding, J., and **P. Yang**, 2023: Analytical Solution of Light Scattering by a Spheroid. International Geoscience and Remote Sensing Symposium (IGARSS), Pasadena, CA, 16-21 July.

Ding, J., and **P. Yang**, 2023: A Radiative Transfer Model with Jacobian Computational Capabilities for Polarimetric Remote Sensing of the Earth System. SPIE Optics + Photonics Conference, San Diego, CA, 20-24 August.

Yang, P., and J. Ding, Advanced light-scattering computational capabilities for solving the optical properties of nonspherical particles (**invited talk**), SPIE Polarization Science and Remote Sensing conference, San Diego, CA, August 21-22, 2023.

Selected Invited Seminars (total: ~60):

Yang, P., 2008: The Everest Is There, Department of Atmospheric Sciences, The University of Washington, Seattle, WA, October 10, 2008.

Yang, P., 2010: Light Scattering and Radiative Transfer in the Atmosphere, Leipzig Institute for Meteorology (LIM), University of Leipzig, Germany, Oct. 7, 2010.

Yang, P., 2011: Optical properties of dust aerosols and ice crystals – Fundamentals and downstream applications, Meteorological Institute Munich, Ludwig-Maximilians-University Munich, Munich, Germany, September 30, 2011.

Yang, P., 2018: Potential improvements of GISS ModelEs Radiation Model, NASA Goddard Institute for Space Studies, New York City, 14 November 2018.

Yang, P., 2019: Atmospheric optics and radiative transfer: genesis and Evolution, NASA Jet Propulsion Laboratory (JPL), Pasadena, CA, 15 May 2019.

Yang, P., 2023: Advanced light-scattering computational capabilities for solving the optical properties for solving the optical properties of nonspherical particles, School of Earth and Environmental Sciences, Seoul National University, South Korea (11/13/2023); Department of Atmospheric Sciences, Yonsei University (11/14/2023), South Korea.