

## **Dr. PING YANG**

Professor & Holder of the David Bullock Harris Chair in Geosciences  
Department of Atmospheric Sciences/Department of Physics & Astronomy  
Texas A&M University  
College Station, TX 77843-3150  
Tel: 979-845-4923, Fax: 979-862-4466  
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### **Education**

Ph.D., 1995, Meteorology, University of Utah, Salt Lake City, Utah, U.S.A.  
(advisor: Prof. K. N. Liou)  
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**

Department Head, 09/2012-present, Dept. of Atmospheric Sciences, Texas A&M  
University  
Holder of the David Bullock Harris Chair in Geosciences (1/1/2010--), College of  
Geosciences, Texas A&M University  
Joint Professor, 06/2009-present, Dept. of Physics & Astronomy, Texas A&M  
University  
Professor, 09/2008-present, Dept. of Atmospheric Sciences, Texas A&M  
University  
Associate Professor, 09/2005-08/2008, Dept. of Atmospheric Sciences, Texas  
A&M University  
Assistant Professor, 09/2001-08/2005, Dept. of Atmospheric Sciences, Texas  
A&M University  
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

Assistant Researcher, 1988-1992, Nanjing Institute of Geography & Limnology, Chinese Academy of Sciences, Nanjing, China

## **Awards and Honors**

- Elected (2013) fellow of the American Meteorological Society (AMS).
- Elected (2010) fellow of the Optical Society of America (OSA).
- Certificate of Appreciation, National Institute of Standards and Technology (NIST), March 2011.
- Certificate of Appreciation, NASA, November 2010.
- Holder of the David Bullock Harris Chair in Geosciences (1/1/2010--), College of Geosciences, Texas A&M University
- The Association of Former Students' (AFS) College-level Teaching Award, Texas A&M University, 2008.
- Dean's Distinguished Achievement Award for Faculty Research, College of Geosciences, Texas A&M University, 2004.
- National Science Foundation (NSF) CAREER Award, 2003
- NASA Group Achievement Award to CRYSTAL-FACE Science Team, 2003
- Best Paper Award, Climate and Radiation Branch, NASA Goddard Space Flight Center, 2000

## **Editorship**

Associate Editor: *Journal of Quantitative Spectroscopy & Radiative Transfer* (01/2007-present)

Associate Editor: *Journal of the Atmospheric Sciences* (01/2004- present)

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

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

## **Professional Association**

- Member of American Geophysical Union

- Member of the Optical Society of America (Fellow status)
- Member of American Meteorology Society (Fellow status)

**Panelist, Program Committee Chair/Member, Science Team member**

- Elected member of the International Radiation Commission (IRC) for term 2012-2016.
- Panelist of the NASA SCIS Review Panel, November 14-16, 2011, Bethesda, Maryland.
- Panelist of the NASA CALIPSO/CloudSat Review Panel, March 10-11, 2010, Baltimore, Maryland.
- Panelist of the NASA New Investigator Program (NIP) Panel, March 26-28, 2008, Baltimore, Maryland.
- Panelist of the NASA New Investigator Program (NIP) Panel, April 11-13, 2006, Greenbelt, Maryland.
- Panelist of the NASA Energy Budget & Radiative Transfer sub panel of the Energy Balance & Atmospheric Composition Panel of the Earth Observing System Re-competition, August 6-7, 2003, Washington, D.C.
- 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
- 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), 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), July 10-14, 2011, Toronto, Canada
- 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 3<sup>rd</sup> 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 CERES Science Team (2004-present)
- Member of the NASA MODIS Science Team (2004-present)
- Member, the American Meteorological Society (AMS) Committee on *Cloud Physics* (Term: 1/30/2007-).

## **Graduate Student Theses and Dissertations Supervised**

### **Master's Degree Theses:**

- 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.
- Zhibo Zhang, M.S. Thesis entitled “Computation of the Scattering Properties of Nonspherical Crystals”; Thesis defense: June 4, 2004; supervised by Ping Yang.
- Jacqueline Kinney, M.S. Thesis entitled “Retrieval of Optical and Microphysical Properties of Ice Clouds Using Atmospheric Radiation Measurement (ARM) Data”; Thesis defense: June 14, 2005; supervised by Ping Yang.
- 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.
- 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.
- 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.
- 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.

- Feng Zhang, M.S. Thesis entitled “Scattering properties of oriented hexagonal ice crystals”; Thesis defense: May 5, 2009; supervised by Ping Yang.
- 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.
- 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.
- 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.
- 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.
- 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.
- Elizabeth Baugher, Thesis entitled “Comparison between model simulations and measurements of hyperspectral far-infrared radiation from FIRST during the RHUBC-II campaign” Thesis defense: October 6, 2011; co-supervised by Ping Yang and Kenneth Bowman.

**Ph.D. Dissertations:**

- 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.

- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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
- 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

- 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
- 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

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

Benjamin Cole	Ph.D. (Chair)	in progress
Binqiang Sun (Dept. of Physics)	Ph.D. (Co-Chair)	in progress
Bingqi Yi	Ph.D. (Co-Chair)	in progress
Chenxi Wang	Ph.D. (Chair)	in progress
Chao Liu	Ph.D. (Chair)	in progress
Xin Huang (Dept of Physics)	Ph.D (Co-chair)	in progress
Chen Zhou	Ph.D. (Co-Chair)	in progress
Guangyang Fang	M.S. (Chair)	in progress
Derek Podowitz	Ph.D. (Chair)	in progress

**Graduate Students (thesis committee member)**

2006	Changhui Li (Dept. of Physics)	Ph.D.	August
2005	Joshua Santarpia	Ph.D.	May
2005	Yong-Seob Lee	Ph.D.	May
2006	Kyoung-Wook Jin	Ph.D.	May
2006	Dylan Copeland (Dept. of Mathematics)	Ph.D.	May
	Seong Won Oh (dept. of Electric Engineering)	Ph. D.	In progress



2006	Kelsey Sippel	M.S.	August
2007	Julie M. Slanker (Dept. of Physics)	M.S.	August
	Joong-hyeok Byeon	M.S.	
	August, 2008		
	Allison Leanne L. Cardona	M.S.	
	August, 2008		
2009	Adam P. Fornea	M.S.	May,
	Stephanie Grounds	M.S.	
	August, 2010		
	Amy Jones	M.S.	
	August, 2010		

### **Research Staff (support and supervisory role)**

Dr. Runjun Li, Assistant Research Scientist, 06/2011-present  
 Dr. Lei Bi, Postdoctoral Research Associate, 05/2011-present  
 Dr. Yu Xie, Postdoctoral Research Associate, 01/2011-present  
 Dr. Shouguo Ding, Postdoctoral Research Associate/ Research Associate,  
 1/2007-present

Dr. Hironobu Iwabuchi, Assistant Research Scientist, 1/2010—12/2010  
 Mr. Hua Li, Senior Research Associate, 11/2008-11/2009  
 Dr. Guang Hong, Postdoctoral Research Associate/Research  
 Associate/Assistant Research Scientist, 3/2005-9/2009  
 Dr. Zhibo Zhang, Postdoctoral Research Associate, 8/2008-11/2008  
 Dr. Jianguo Niu, Postdoctoral Research Associate, 2/2004-8/2007 (co-  
 sponsor with Larry Carey)  
 Dr. Guang Guo, Postdoctoral Research Associate, 5/2002-7/2004  
 Mr. Heli Wei, Research Associate/Senior Research Associate, 4/2002-  
 3/2005

### **Visiting Scientist Sponsored**

Prof. Lei Zhang  
 Associate Dean  
 College of Atmospheric Sciences,

Lanzhou University, Lanzhou, China,

Period of scientific visit to Texas A&M: 9/2005-5/2006.

Dr. Xiaodong Liu

Deputy Director

Institute of Earth Environment, Chinese Academy of Sciences

Xi'an, China

07/2009-09/2009

Dr. Tang-Huang Lin

Assistant Professor

Center for Space and Remote Sensing Research

National Central University

Jhongli City, Taoyuan

ROC, Taiwan 32001

08/2010-01/2011

### **Undergraduate Advisor**

Academic advisor for a number of undergraduate students majoring in atmospheric sciences.

### **Courses Taught**

METR-335 (Atmospheric Thermodynamics), Spring 2002

ATMO-612 (Atmospheric Physics II), Spring 2003

ATMO-446 (Physical Meteorology), Fall 2003

ATMO-612 (Atmospheric Physics II), Spring 2004

ATMO-446 (Physical Meteorology), Spring 2005

ATMO-612 (Atmospheric Physics II), Spring 2005

ATMO-655 (Satellite Data in Meteorology), Fall 2005

ATMO-612 (Atmospheric Physics II), Spring 2006

ATMO-655 (Satellite Data in Meteorology), Fall 2006

ATMO-689 (Special Topic on Light Scattering), Spring 2007

ATMO-689 (Special Topic on Advanced Radiative Transfer Theory), Fall 2007

ATMO-441 Satellite Meteorology and Remote Sensing, Spring 2008

ATMO-612 (Atmospheric Physics II), Spring 2009

ATMO-689 (Special Topic on Light Scattering), Summer 2009

ATMO-612 (Atmospheric Physics II), Spring 2010

ATMO-612 (Atmospheric Physics II), Spring 2011

ATMO-689 (Special Topic on Single- and Multiple-Scattering of Light in the Atmosphere), Summer 2011

## **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-present

### **University Level:**

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

## **External Services**

- Reviewer for:

*J. Atmos. Sci.*

*J. Appl. Meteor. Clim.*

*J. Climate*

*J. Geophys. Res.*

*Reviews of Geophysics*

*Geophys. 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*  
*Atmos. Chem. Phys.*  
*Quart. J. Roy. Meteorol. Soc.*  
*Appl. Spectroscopy*  
*J. Electromagnetic Waves and Applications*  
*J. Aerosol Science*  
*Central European Journal of Physics*  
*Advances in Atmospheric Sciences*  
*Aerosol Science & Technology*

- 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
- 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 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 promotion dossier for the Department of Atmospheric, Oceanic, and Space Science, University of Michigan.

## Funded Projects

### Current Projects (\* indicates current projects):

**\*RF-422161-00001 (Texas A&M internal grant account number):**

PI: Ping Yang, Co-I: George W. Kattawar

Source: NSF

Project Title: Studying dust optical and radiative properties using optimal morphological sets

Amount: \$419,905 for 06/01/2008-05/31/2012

**\*RF-503531-00001/01001**

PI: Ping Yang; Co-I: Shaima Nasiri

Source: NASA

Project Title: Research Opportunities in Space and Earth Sciences 2010 (ROSES 2010)

Amount: \$431,875 for 07/29/2011-07/28/2014

**\*RF-502951-00001**

PI: Ping Yang

Source: NASA

Project Title: Simulation of the Optical Properties of Atmospheric and Oceanic Particles

Amount: \$373,451 for 06/20/2011-06/19/2014

**\*RF-502961-00001/01001**

PI: Ping Yang; Co-I: K. N. Liou (UCLA)

Source: NASA

Project Title: Determination of the Aspect Ratio of Airborne Dust Particles from Spaceborne Polarimetry Measurements

Amount: \$415,056 for 06/20/2011-06/19/2014

**\*RF-427472-00001/01001:**

PI: Ping Yang; Co-I: K. N. Liou

Source: USDOT/RITA/Volpe Center

Project Title: "Developing optical datasets and modeling capabilities to assess the radiative forcing of contrails and contrail cirrus"

Amount: \$209,358 for 2/08/2011-12/31/2011; \$52,654 for 1/1/2012-3/31/2012

**\*RF-429291-00001:**

PI: Ping Yang

Source: NASA  
Project Title: "Development of an algorithm to retrieve the habit and relative size distributions of ice crystals in cirrus clouds"  
Amount: \$178,739 for 06/1/2010-5/31/2013

**\*RF-426491-00001:**

PI: Ping Yang  
Source: NASA  
Project Title: Research in Light Scattering and Radiative Transfer for Improving the Retrieval of Ice Cloud Properties  
Amount: \$183,578 for 10/1/2010-9/30/2012

**\*RF-429641-00001:**

PI: Andrew Dessler; Co-I: Ping Yang  
Source: NASA  
Project Title: Measurements of cloud radiative impact on the climate using CALIPSO, CloudSat and other A-train sensors  
Amount: \$428,565 for 10/01/2010-9/30/2013

**\*RF-502111-00001**

PI: Ping Yang  
Source: Subcontract from University of Wisconsin (Prime Sponsor: NASA)  
Project Title: Ice cloud bulk scattering and absorption models: refinement through intercomparison of hyperspectral, narrowband, and polarization sensors  
Amount: \$57,149 for 2/16/2011-2/15/2012 (The Y2 and Y3 funding to be awarded)  
(A sub-award of a grant; PI: B. A. Baum, SSEC/U. of Wisconsin; Co-Is: Ping Yang, TAMU; A. Heymsfield, NCAR)

**\*462041-00001**

PI: Ping Yang  
Source: Subcontract from University of Wisconsin (Prime Sponsor: NASA)  
Project Title: Investigation of Ice Particle Characteristics Through Comparison of APS and MODIS Measurements  
Amount: \$33,153 for 8/26/2011-8/25/2012 (Additional Y1 funding and the Y2 and Y3 funding to be awarded)  
(A sub-award of a grant; PI: B. A. Baum, SSEC/U. of Wisconsin; Co-Is: Ping Yang, TAMU; Steven Platnick, NASA-GSFC)

**\*RF-503291-00001**

PI: Ping Yang  
Source: University of Wisconsin (Federal Prime Sponsor: DOC-NOAA)

Project Title: Development of the optical properties of soot, dust aerosols and ice crystals in support of the GOES-R research project of the Cooperative Institute for Meteorological Studies (CMISS)

Amount: \$30,000 for 04/1/2011-03/31/2012

**\*461251-00001**

PI: Ping Yang

Source: NOAA

Project Title: Support for Cloud and Aerosol Retrieval in the GOES-R Mission

Amount: \$136,046 for 09/23/2011-09/22/2012

**Completed Projects:**

**RF-458131-00001:**

PI: Ping Yang

Source: NSF

Project Title: CAREER: Investigation of the scattering and radiative properties of ice and mixed-phase clouds: Applications to remote sensing & cloud parameterization.

Budget: \$623,408 for 05/2003-04/2008 (extended to 05/2009)

**RF-499361-00001:**

PI: Ping Yang, Co-Is: Andrew Dessler and Gerald North

Source: NASA

Project Title: "Study of the properties and radiative forcing of global ice clouds using the synergetic MODIS, AIRS, and CERES products and the NCAR Community Atmospheric Model"

Amount: \$300,000 for 01/14/2008-1/13/2012

**RF-426931-00001:**

PI: Ping Yang

Source: NOAA

Project Title: "Enhancement of CRTM and support for cloud and aerosol retrieval in the GOES-R Mission"

Amount: \$442,548 for 09/22/2009-9/21/2011

**RF-427471-00001/01001:**

PI: Ping Yang; Co-I: K. N. Liou



Source: USDOT/RITA/Volpe Center

Project Title: “Developing optical datasets and modeling capabilities to assess the radiative forcing of contrails and contrail cirrus”  
Amount: \$217,632 for 12/07/2009-2/7/2011

**RF-492782-00001:**

PI: Ping Yang  
Source: NOAA (via a subcontract from University of Wisconsin)  
Project Title: Development of the optical properties of aerosols and ice crystals in support of the GOES-R research project of the Cooperative Institute for Meteorological Studies (CMISS)  
Amount: \$80,000 for 04/01/2010-05/31/2011

**RF-429431-00001:**

PI: Ping Yang  
Source: NASA  
Project Title: “Data analysis and modeling simulation in support of NASA’s Far-infrared Spectroscopy of Troposphere (FIRST) project”  
Amount: \$52,190 for 06/2/2010-1/04/2012

**RF-422661-00001:**

PI: Ping Yang  
Source: NASA (via a sub-award through U. of Wisconsin)  
Project Title: Research in support of “Refinement of Ice Cloud Bulk optical Models: From Microphysical Measurements to Global Retrievals using Multiple Satellite Instruments”  
Amount: \$170,000 for 1/17/2008-1/16/2011  
(A sub-award of a grant; PI: B. A. Baum, SSEC/U. of Wisconsin; Co-Is: Ping Yang, TAMU; A. Heymsfield, NCAR)

**RF-464031-00001:**

PI: Ping Yang; Co-Is: Gerald North and Andrew Dessler  
Source: NASA  
Project Title: Investigation of the spatial and temporal distributions of cirrus clouds over tropics and their radiative forcing effects using MODIS and CERES data  
Budget: \$469,777 for 6/2004-5/2007 (extended to 5/2008).

**RF-423011-00001:**

PI: Ping Yang  
Source: NASA

Project Title: Synergy of Satellite/Surface Observations and Light-Scattering/Radiative-Transfer Modeling for Aerosol Research

Amount: \$155,459 for 05/07/2008-08/31/2011

(A sub-award of a grant; PI: S.-C. Tsay, NASA GSFC; Co-Is: N. Christina Hsu, NASA GSFC; Ping Yang, TAMU)

**RF-454321-00001:**

PI: Ping Yang, Co-I: Warren Wiscombe

Source: NASA

Project Title: Scattering and absorption properties of nonspherical/inhomogeneous aerosols and ice crystals: Application to radiative transfer simulation and remote sensing implementation”.

Budget: \$64,991 for 9/2001-8/2003.

**RF-483881-00001:**

PI: Ping Yang

Source: NASA/Langley Research Center

Project Title: Cloud object analysis and modeling of cloud-aerosols interactions and cloud feedbacks with the combined CERES and CALIPSO data

Budget: \$268,601 for 06/01/2006-12/31/2009

(A sub-award of a grant; PI: K.-M. Xu, NASA LaRC; Co-Is: D. M. Winker, NASA LaRC; Y. X. Hu, NASA LaRC; X. Zhao; U. of Maryland-College Park; Ping Yang, TAMU)

**RF-423541-00001:**

PI: Ping Yang

Source: NASA

Project Title: Computation of the single-scattering properties of ice clouds in support of NASA’s research effort to study ice cloud properties from GLAS observations

Budget: \$39,726 for 09/01/2008-12/31/2009

**RF-423671-00001:**

PI: P. Yang

Source: NOAA

Project Title: Enhancement of the capabilities of CRTM in Atmospheres

Budget: \$76,423 for 9/29/2008-9/28/2009

**RF-423611-00001:**

PI: P. Yang  
Source: NOAA  
Project Title: The Effect of Particle Shape on the Aerosol Retrieval  
from ABI  
Budget: \$75,000 for 9/29/2008-9/28/2009

**RF-466391-00001:**

PI: Ping Yang  
Sponsor: Science Applications International Corporation  
Project Title: Data Processing, Modeling and Analysis of Ice  
Clouds and In-situ Cloud Data  
Budget: \$291,497 for 11/1/2004-11/30/2006  
This project was in support of two NASA projects:  
PI: B. A. Baum (NASA LaRC, then); Co-Is: Ping Yang, TAMU;  
Paul Menzel (NOAA): “Support of NPP Cloud Retrieval Efforts”

PI: B. A. Baum (NASA LaRC, then); Co-Is: A. Heymsfield, NCAR;  
Ping Yang, TAMU; S. Platnick, NASA GSFC; R. Aune (NOAA):  
“Regional and global analyses of multilayered clouds, ice-phase  
clouds and mixed-phase clouds using EOS-Terra and Aqua data”.

**RF-492501-00001:**

PI: Ping Yang  
Source: NASA  
Project Title: Research in Light Scattering and Radiative Transfer  
for Improving the Retrieval of Ice Cloud Properties  
Budget: \$153,075 for 10/2006-9/2009.

**RF-454051-00001:**

PI: Ping Yang  
Source NASA  
Project Title: Analysis of historical cirrus in situ data in support of  
Terra, Aqua, and GIFTS cirrus retrieval efforts  
Budget: \$182,691 for 11/2001-10/2004  
(A sub-award of a grant; PI: B. A. Baum, NASA LaRC, then; Co-Is:  
Ping Yang, TAMU; A. Heymsfield, NCAR)

**RF-453281-00001:**

PI: Ping Yang  
Source: Office of Naval Research (via a subcontract from U. of  
Wisconsin)  
Project Title: Radiative properties of cirrus clouds and water  
clouds: Model development in support of university  
of Wisconsin GIFTS/IOMI MURI project  
Budget: \$164,380 for 6/30/2001-4/30/2004

**RF-453281-00001 (extension):**

PI: Ping Yang

Source: Office of Naval Research (via a subcontract from U. of Wisconsin)

Project Title: A two-year extension for “Radiative properties of ice clouds and water clouds: model development in support of University of Wisconsin GIFTS/IOMI MURI project

Budget: \$219,965 for 5/2004-4/2006

**RF-492781-00001:**

PI: P. Yang, Co-I: S. Nasiri

Source: NOAA (via a subaward from U. of Wisconsin-Madison)

Project Title: Research in support of GOES-R RISK Reduction Project

Budget: \$150,000 for 1/1/2006-12/31/2008.

**RF-468701-00001:**

PI: Ping Yang

Source: NASA/GSFC

Project Title: (Extension/continuation of) “Retrieve Cirrus reflectance using visible and 1.38- $\mu$ m water vapor absorption bands”

Budget: \$126,725 for 7/1/05-/6/30/08.

**RF-495671-00001:**

PI: P. Yang

Source: NASA

Project Title: Development of a fast forward radiative transfer model and retrieval algorithm for inferring cloud properties from hyperspectral measurements

Budget: \$100,964 for 2/1/2007-5/26/2010

**RF-455701-00001:**

PI: Ping Yang

Source: NASA

Project Title: Analysis of measurement and modeling studies for CRYSTAL-FACE

Budget: \$80,000 for 5/2002-4/2005

(A sub-award of a grant; PI: S.-C. Tsay, NASA GSFC’ Co-Is: Q. Ji, U. of Maryland-College Park; Ping Yang, TAMU)

**RF-454471-00001:**

PI: Ping Yang

Source: NASA (via a subcontract from Univ. of Maryland Baltimore County)

Project Title: Research in support of “Microphysical properties of crystalline PSC particles derived from airborne lidar measurements acquired during the SOLVE mission

Budget: \$30,298 for 9/2002-8/2005

(A sub-award of a grant; PI: J. Reichart, UMBC; Ping Yang was one of the co-Is of the original proposal)

**RF-455411-00001:**

PI: Ping Yang

Source: NASA

Project Title: Retrieve cirrus reflectance using visible and 1.38  $\mu\text{m}$  water vapor bands”. Funded by NASA

Budget: \$120,000 for 4/2002-3/2005

**RF-455231-0001:**

PI: Ping Yang

Sponsor: Science Applications International Corp.

Project Title: Support for CALIPSO

Budget: \$189,483 for 3/2002-5/2005

**RF-497631-00001**

PI: Ping Yang

Source: NOAA

Project Title: Enhancement of the Capabilities of CRTM for Simulating Radiative Transfer in Ice-Cloudy Atmospheres

Budget: \$79,964 for /09/01/2007-08/31/2008

**RF-492501-00001**

PI: Ping Yang

Source: NOAA

Project Title: Development of consistent lookup libraries for retrieving the microphysical and radiative properties of water, mixed-phase and ice clouds in support of the GOES-R mission

Budget: \$59,999 for 9/8/2006-9/7/2007.

**RF-497701-00001 (this project was a continuation of RF-492501-00001)**

PI: Ping Yang

Source: NOAA

Project Title: Development of consistent lookup libraries for retrieving the microphysical and radiative properties of water, mixed-phase and ice clouds in support of the GOES-R mission

Budget: \$63,043 for 9/8/2007-9/7/2008.

**RF-497641-00001:**

PI: Ping Yang, Co-I: Andrew Dessler

Source: DOT/FAA

Project Title: Develop a subject-specific white paper on the “climate impacts of contrails and contrail-cirrus”

Amount: \$45,079 for 10/12/2007-08/31/2008.

**RF-499691-00001:**

PI: Ping Yang

Source: NASA

Project Title: “Investigation of the optical properties of horizontally oriented ice crystals in support of NASA’s CALIPSO project”

Amount: \$92,319 for 01/6/2008-5/31/2011

**RF-422731-00001:**

PI: Ping Yang

Source: NASA

Project Title: Research in support of “Estimation of Cloud Microphysics from MODIS Infrared Observations”

Amount: \$167,000 for 06/01/2008-05/31/2011

(A sub-award of a grant; PI: A. Heidinger, NOAA; Co-Is: S. Platnick, NASA GSFC; M. Pavolonis, NOAA; Ping Yang, TAMU)

## Publications

Invited book chapters:	<b>7</b>
Book Review:	<b>1</b>
Book:	<b>1</b>
Publications in peer-reviewed journals:	<b>204</b> (as of 1/29/2013)
Total times cited in the literature:	<b>4,214</b> (as of 1/29/2013)
H-index:	<b>35</b> (as of 1/29/2013)

Peer-reviewed Journal Publications per year	
2013	3 (plus 8 in press as of 1/29/2013)
2012	18
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	15
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	
Journal of Quantitative Spectroscopy & Radiative Transfer	37
Journal of Geophysical Research	27
Applied Optics	23
Journal of Applied Meteorology and Climatology	25
IEEE Trans. Geosci. Remote Sensing	17
Optics Express	15
Geophysical Research Letters	7
Journal of the Atmospheric Sciences	6
IEEE Geoscience and Remote Sensing Letters	4

Atmospheric Chemistry and Physics	5
Journal of the Optical Society of America A	4
Journal of Climate	4
Atmospheric Research	3
Journal of Aerosol Science	4
Journal of Atmospheric and Oceanic Technology	3
Contribution to Atmospheric Physics	2
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	1
Journal of Biomedical Optics	1
Bulletin of the American Meteorological Society	1
Remote Sensing of Environment	1
J. of Applied Remote Sensing	2
Aerosol Science and Technology	1
Climate Dynamics	1
International J. of Remote Sensing	1
Remote Sensing	1
Atmospheric Measurement Techniques	1

### **Book**

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

### **Books in preparation**

Liou, K. N., and P. Yang, Light Scattering by Ice Crystals: Fundamentals and Applications, Cambridge University Press (in preparation).

Bowman, K., and P. Yang, Introduction to Satellite meteorology and Atmospheric Remote Sensing, Wiley VCH Verlag (in preparation).

**Note that the authors have contracted with the publishers to write these books.**

### **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.

### **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

(link:

[http://www.faa.gov/about/office\\_org/headquarters\\_offices/aep/aviation\\_climate/](http://www.faa.gov/about/office_org/headquarters_offices/aep/aviation_climate/)),

pp. 57, solicited and funded by DOT/FAA.

### **Book Review**

Yang, P., 2008: *Cloud Optics* by A. A. Kokhanovsky, *BAMS*, Vol. 89, P. 1924.

## **Peer-Reviewed Journal Papers**

(\* denotes work involving a graduate student or research staff member at Texas A&M University when the work was done)

### **2013 (3 paper)**

[Peer-reviewed paper – 204]:

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  $\mu\text{m}$ . *J. Atmos. Sci.*, 70, 330-347.

[Peer-reviewed paper – 203]:

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.

[Peer-reviewed paper – 202]:

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.

### **2012 (18 paper)**

[Peer-reviewed paper – 201]:

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

[Peer-reviewed paper – 200]:

Wang, C., S. Ding, P. Yang, B. Baum, and A. E. Dessler, 2012: A new approach to retrieving cirrus cloud height with a combination of MODIS 1.24- and 1.38- $\mu\text{m}$  channels, *Geophys. Res. Letter*, VOL. 39, L24806, doi:10.1029/2012GL053854, 2012

[Peer-reviewed paper – 199]:

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

[Peer-reviewed paper – 198]:

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.

[Peer-reviewed paper -- 197]:

van Dienenhoven, 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.

[Peer-reviewed paper -- 196]:

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.

[Peer-reviewed paper -- 195]:

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.

\*[Peer-reviewed paper -- 194]:

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.

\*[Peer-reviewed paper -- 193]:

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.

\*[Peer-reviewed paper -- 192]:

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

[Peer-reviewed paper -- 191]:

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

[Peer-reviewed paper -- 190]:

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.

\*[Peer-reviewed paper -- 189]:

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.

\*[Peer-reviewed paper -- 188]:

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.

\*[Peer-reviewed paper -- 187]:

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.

\*[Peer-reviewed paper -- 186]:

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.

\*[Peer-reviewed paper -- 185]:

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.

\*[Peer-reviewed paper -- 184]:

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.

### **2011 (17 papers)**

[Peer-reviewed paper -- 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.

[Peer-reviewed paper -- 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.

[Peer-reviewed paper -- 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.

[Peer-reviewed paper -- 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.

[Peer-reviewed paper -- 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.

[Peer-reviewed paper -- 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.

[Peer-reviewed paper -- 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.

[Peer-reviewed paper -- 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.

[Peer-reviewed paper -- 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.

[Peer-reviewed paper -- 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 tectonic uplift and global climate change, *Climate Dynamics*, doi: 10.1007/s00382-011-1078-1, 37: 2289-2301.

[Peer-reviewed paper -- 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.

[Peer-reviewed paper -- 172]:

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

[Peer-reviewed paper -- 171]:

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

[Peer-reviewed paper -- 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.

[Peer-reviewed paper -- 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.

\*[Peer-reviewed paper -- 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

[Peer-reviewed paper -- 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.

### 2010 (17 papers)

[Peer-reviewed paper -- 166]:

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.

[Peer-reviewed paper -- 165]:

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.

[Peer-reviewed paper -- 164]:

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.

[Peer-reviewed paper -- 163]:

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.

[Peer-reviewed paper -- 162]:

Kindel, B., K. S. Schmide, 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

[Peer-reviewed paper -- 161]:

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.



[Peer-reviewed paper -- 160]:

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.

[Peer-reviewed paper -- 159]:

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.

\*[Peer-reviewed paper -- 158]:

\*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.

\*[Peer-reviewed paper -- 157]:

\*Li, H., C. Liu, L. Bi, P. Yang, and G. W. Kattawar, 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.

\*[Peer-reviewed paper -- 156]:

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.

\*[Peer-reviewed paper -- 155]:

\*Tang, G., R. Lee Panetta, P. Yang, 2010: Application of the discontinuous Galerkin time domain method to the simulation of the optical properties of dielectric particles, *Appl. Opt.* 49, 2827-2840.

\*[Peer-reviewed paper -- 154]:

\*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.

[Peer-reviewed paper -- 153]:

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

\*[Peer-reviewed paper -- 152]:

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.

\*[Peer-reviewed paper -- 151]:

\*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.

\*[Peer-reviewed paper -- 150]:

\*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.

### **2009 (22 papers)**

\*[Peer-reviewed paper -- 149]:

\*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.

\*[Peer-reviewed paper -- 148]:

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\*[Peer-reviewed paper -- 47]:

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\*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 sepcific orientations. *J. of Optics A: Pure and Applied Optics* 5, 520-527

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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.

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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.

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[Peer-reviewed paper -- 13]:

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[Peer-reviewed paper -- 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.

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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 5.1-5.3 $\mu$ m and 3.7  $\mu$ m channel data, *J. Geophys. Res.*, 103, 23,231-23,242.

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[Peer-reviewed paper -- 6]:

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[Peer-reviewed paper -- 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.

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[Peer-reviewed paper -- 3]:

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[Peer-reviewed paper -- 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

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[Peer-reviewed paper -- 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.

## **Conference Presentations and Proceeding Publications**

(\* denotes work involving a graduate student or research staff member at Texas A&M University when the work was done)

[Conference Presentation/Proceeding Publication – 268]:

Ding, S., P. Yang and S. L. Nasiri: Development of a CrIS Simulator for Clouds and Dust Aerosols, 93rd American Meteorological Society Annual Meeting, poster presentation, Austin, TX, Jan 5 - Jan 10, 2013

[Conference Presentation/Proceeding Publication – 267]:

Huang, X., P. Yang, G. W. Kattawar, and K. N. Liou: Retrieval of Non-spherical Dust Aerosol from PARASOL, 93rd American Meteorological Society Annual Meeting, poster presentation, Austin, TX, Jan 5 - Jan 10, 2013

[Conference Presentation/Proceeding Publication – 266]:

Li, R., P. Yang, S. L. Nasiri, and I. Laszlo: Remote sensing characterization of dust plumes, 93rd American Meteorological Society Annual Meeting, poster presentation, Austin, TX, Jan 5 - Jan 10, 2013

[Conference Presentation/Proceeding Publication – 265]:

Liu, C., R. L. Panetta and P. Yang: The effects of surface roughness on the light scattering properties of ice crystals, 93rd American Meteorological Society Annual Meeting, poster presentation, Austin, TX, Jan 5 - Jan 10, 2013

[Conference Presentation/Proceeding Publication – 264]:

Pitts, K., S. L. Nasiri, P. Yang, N. Smith, and A. L. Demko: Comparison of Suomi NPP VIIRS and EOS MODIS Cloud Retrieval Products Using a Uniform Space-time Algorithm, 93rd American Meteorological Society Annual Meeting, poster presentation, Austin, TX, Jan 5 - Jan 10, 2013

[Conference Presentation/Proceeding Publication – 263]:

Sun, B., P. Yang and G. W. Kattawar: Large Aspect Ratio T-matrix Method, 93rd American Meteorological Society Annual Meeting, poster presentation, Austin, TX, Jan 5 - Jan 10, 2013

[Conference Presentation/Proceeding Publication – 262]:

Wang, C., S. Ding, P. Yang, B. Baum, and A. Dessler: A new method to retrieve cirrus cloud height with MODIS observations, 93rd American Meteorological Society Annual Meeting, oral presentation, Austin, TX,

Jan 5 - Jan 10, 2013

[Conference Presentation/Proceeding Publication – 261]:

Yang, P., S. L. Nasiri, R. L. Panetta, G. W. Kattawar, S. Ding Sr., L. Bi, R. Li, C. Wang, C. Liu, and X. Huang: Development of light scattering and radiative transfer modeling capabilities for satellite remote sensing, 93rd American Meteorological Society Annual Meeting, poster presentation, Austin, TX, Jan 5 - Jan 10, 2013

[Conference Presentation/Proceeding Publication – 260]:

Yi, B., P. Yang, B. A. Baum, T. L'Ecuyer: A new parameterization of ice cloud optical properties for applications in radiative transfer models and general circulation models, 93rd American Meteorological Society Annual Meeting, poster presentation, Austin, TX, Jan 5 - Jan 10, 2013

[Conference Presentation/Proceeding Publication – 259]:

Colarco, P. R., K.-M. Kim, E. P. Nowottnick, B. Yi, P. Yang, J. Smith, C. Bardeen: Importance of Particle Shape and Refractive Index in Climate Simulations of the Dust Aerosol Lifecycle, 2012 AGU Fall Meeting, poster presentation, San Francisco, CA, Dec 3 - Dec 7, 2012

[Conference Presentation/Proceeding Publication – 258]:

Cole, B. H., P. Yang, B. A. Baum, J. Riedi: A Retrieval Method for Ice Particle Size Using PARASOL Observations, 2012 AGU Fall Meeting, poster presentation, San Francisco, CA, Dec 3 - Dec 7, 2012

[Conference Presentation/Proceeding Publication – 257]:

Dessler, A. E, C. Zhou, M. D. Zelinka, and P. Yang: An analysis of the short-term cloud feedback using MODIS data, 2012 AGU Fall Meeting, oral presentation, San Francisco, CA, Dec 3 - Dec 7, 2012

[Conference Presentation/Proceeding Publication – 256]:

Ding, S., C. Wang, P. Yang, S. L. Nasiri: Development of a VIIRS Radiance Simulator for Ice Clouds, 2012 AGU Fall Meeting, poster presentation, San Francisco, CA, Dec 3 - Dec 7, 2012

[Conference Presentation/Proceeding Publication – 255]:

Huang, X., P. Yang, G. W. Kattawar, K.-N. Liou: A fast adding-doubling method for multiple scattering of polarized light, 2012 AGU Fall Meeting, poster presentation, San Francisco, CA, Dec 3 - Dec 7, 2012

[Conference Presentation/Proceeding Publication – 254]:

Li, R., P. Yang, S. D. Brooks: A Sensitivity Study of Phase Matrices to

Dust Ensembles, 2012 AGU Fall Meeting, poster presentation, San Francisco, CA, Dec 3 - Dec 7, 2012

[Conference Presentation/Proceeding Publication – 253]:

Podowitz, D., C. Liu, R. L. Panetta, P. Yang: PSTD and ADDA approximation for light scattering of spherical particles, 2012 AGU Fall Meeting, poster presentation, San Francisco, CA, Dec 3 - Dec 7, 2012

[Conference Presentation/Proceeding Publication – 252]:

Riedi, J., L. Mcharek, L. Labonnote, P. Yang, B. H. Cole, S. Platnick: A study of ice crystal backscatter features from 5 years of collocated POLDER, MODIS and CALIOP observations, 2012 AGU Fall Meeting, oral presentation, San Francisco, CA, Dec 3 - Dec 7, 2012

[Conference Presentation/Proceeding Publication – 251]:

Sun, B., P. Yang, G. W. Kattawar: Many-Body Iterative T-matrix (MBIT) method, 2012 AGU Fall Meeting, poster presentation, San Francisco, CA, Dec 3 - Dec 7, 2012

[Conference Presentation/Proceeding Publication – 250]:

Wang, C., P. Yang, S. L. Nasiri, S. Platnick, B. A. Baum, A. K. Heidinger, X. Liu: A fast radiance simulator for the solar bands of NPP/VIRS instrument, 2012 AGU Fall Meeting, poster presentation, San Francisco, CA, Dec 3 - Dec 7, 2012

[Conference Presentation/Proceeding Publication – 249]:

Yang, P., L. Bi, C. Liu, R. L. Panetta: Advances in Electromagnetic Scattering Computing Techniques, 2012 AGU Fall Meeting, oral presentation, San Francisco, CA, Dec 3 - Dec 7, 2012

[Conference Presentation/Proceeding Publication – 248]:

Yi, B., P. Yang, B. A. Baum, T. L'Ecuyer: Effects of ice particle surface roughness on ice cloud radiative forcing simulations, 2012 AGU Fall Meeting, poster presentation, San Francisco

[Conference Presentation/Proceeding Publication – 247]:

Yi, B., Y. Xie, P. Yang, K. N. Liou, P. Minnis, J. Penner, and D. Duda, 2012: Contrail optical property parameterization and application in radiative forcing estimations, *3<sup>rd</sup> ACCRI Symposium*, 27-29 November, Virginia Beach, VA

[Conference Presentation/Proceeding Publication – 246]:



Yang, P., K. N. Liou, B. Yi, and Y. Takano, 2012: Developing optical datasets and modeling capabilities to assess the radiative forcing of contrails, Part I & II (two presentations). *3<sup>rd</sup> ACCRI Symposium*, 27-29 November, Virginia Beach, VA

[Conference Presentation/Proceeding Publication – 245]:

Ding, S., C. Wang, B. Cole, and P. Yang, 2012: Enhance the capabilities of CRTM for simulations under all sky conditions. *10<sup>th</sup> JCSDA Workshop on Satellite Data Assimilation*, 10-12 October 2012, NOAA Center for Weather and Climate Prediction (NCWCP), College Park, MD.

[Conference Presentation/Proceeding Publication – 244]:

Panetta, R. L., C. Liu, P. Yang, 2012: A comparison of pseudo-spectral and discrete dipole methods in numerical simulation of single particle light scattering. *International Radiation Symposium*, 06-10 August 2012, Dahlem Cube, Berlin, Germany.

[Conference Presentation/Proceeding Publication – 243]:

Yang, P. and L. Bi, 2012: Development of new modeling capabilities to simulate the optical properties of atmospheric particles, *International Radiation Symposium*. 06-10 August 2012, Dahlem Cube, Berlin, Germany.

[Conference Presentation/Proceeding Publication -- 242]:

Li, R, P, Yang, S. L. Nasiri, I. Laszlo, 2012: Statistical Detection of MODIS Dust and Smoke Pixels Using CALIPSO Assignment, CALIPSO, CloudSat, EarthCARE Joint Workshop, Paris, France, June 18-22, 2012.

[Conference Presentation/Proceeding Publication -- 241]:

Yang, P., A. Dessler, C. Zhou, and C. Wang, 2012: Study of cloud properties with CALIPSO observation. *CALIPSO, CloudSat, EarthCARE Joint Workshop*, 18-22 June 2012, Paris, France

[Conference Presentation/Proceeding Publication -- 240]:

Yang, P., and A. E. Dessler: Study of the Optical and Microphysical Properties of Dust Aerosols and Ice Clouds From Various Perspectives, 92nd AMS Annual Meeting, New Orleans, LA, January 22-26, 2012.

[Conference Presentation/Proceeding Publication -- 239]:

Yi, B., P. Yang, and A. E. Dessler: Clear-Sky Shortwave Radiative Effect of Aerosols Based on Multiple Satellite Observations, 92nd AMS Annual Meeting, New Orleans, LA, January 22-26, 2012.

- [Conference Presentation/Proceeding Publication -- 238]:  
Liu, C., L.R. Panetta, and P. Yang: Effect of Monomer Size Distribution on the Scattering and Absorption Properties of BC Aggregates, 92nd AMS Annual Meeting, New Orleans, LA, January 22-26, 2012.
- [Conference Presentation/Proceeding Publication -- 237]:  
Wang, C., and P. Yang: Inference of Ice Cloud Properties Using Hyperspectral Observations and a Fast Infrared Radiative Transfer Model, 92nd AMS Annual Meeting, New Orleans, LA, January 22-26, 2012.
- [Conference Presentation/Proceeding Publication -- 236]:  
Fang, G., and P. Yang: Optical Properties of Saharan Dust and Asian Dust Aerosols, 92nd AMS Annual Meeting, New Orleans, LA, January 22-26, 2012.
- [Conference Presentation/Proceeding Publication -- 235]:  
Huang, X., P. Yang, and G. W. Kattawar: Retrieving Dust Aspect Ratio with Collocated POLDER and MODIS Measurements, 92nd AMS Annual Meeting, New Orleans, LA, January 22-26, 2012.
- [Conference Presentation/Proceeding Publication -- 234]:  
Sun, B., L. Bi, P. Yang, and G. W. Kattawar: The Light Scattering Properties of Soft Particles Using a New Physical-Geometric Optics Hybrid Method, 92nd AMS Annual Meeting, New Orleans, LA, January 22-26, 2012.
- [Conference Presentation/Proceeding Publication -- 233]:  
Bi, L., and P. Yang: Temperature-Dependent Microwave Optical Properties of Nonspherical Ice Particles, 92nd AMS Annual Meeting, New Orleans, LA, January 22-26, 2012.
- [Conference Presentation/Proceeding Publication -- 232]:  
Nasiri, S. L., P. Yang, B. Baum, and A. K. Heidinger: Building a Framework for Evaluating NPP and JPSS VIIRS Cloud Property Retrievals, 92nd AMS Annual Meeting, New Orleans, LA, January 22-26, 2012.
- [Conference Presentation/Proceeding Publication -- 231]:  
Li, R., and P. Yang: Measurements of Scattering Matrices of Non-Spherical Particles, 92nd AMS Annual Meeting, New Orleans, LA, January 22-26, 2012.
- [Conference Presentation/Proceeding Publication -- 230]:

Xie, Y., and P. Yang: Parameterization of Bulk Radiative Properties for Use in Climate Models, 92nd AMS Annual Meeting, New Orleans, LA, January 22-26, 2012.

[Conference Presentation/Proceeding Publication -- 229]:

Yang, P., and A. E. Dessler: Study of the Microphysical and Optical Properties of Ice Clouds and Dust Aerosols using observations made by active and passive satellite sensors in conjunction with modeling capabilities, 2011 AGU Fall Meeting, San Francisco, California, December 5-9, 2011

[Conference Presentation/Proceeding Publication -- 228]:

Holz, R., R. Kuehn, M. Vaughan, S. E. Platnick, and P. Yang: Finding Closure between V3 CALIOP and MODIS optical depth retrievals using IR observations, 2011 AGU Fall Meeting, San Francisco, California, December 5-9, 2011

[Conference Presentation/Proceeding Publication -- 227]:

Baum, B. A., A. Heymsfield, and P. Yang: Towards More Consistent Retrievals of Ice Cloud Optical and Microphysical Properties from Polar Orbiting Sensors, 2011 AGU Fall Meeting, San Francisco, California, December 5-9, 2011

[Conference Presentation/Proceeding Publication -- 226]:

Wu, W., X. Liu, H. Li, D. K. Zhou, A. Larar, and P. Yang: Hyperspectral Infrared Remote Sensing In The Presence of Cloud, 2011 AGU Fall Meeting, San Francisco, California, December 5-9, 2011

[Conference Presentation/Proceeding Publication -- 225]:

Yi, B., and P. Yang: Improvements in the parameterizations of shortwave and longwave radiative properties of dust and ice clouds, 2011 AGU Fall Meeting, San Francisco, California, December 5-9, 2011

[Conference Presentation/Proceeding Publication -- 224]:

Cole, B., P. Yang, B. A. Baum, and J. Riedi: Ice cloud microphysics inferred from PARASOL satellite observations, 2011 AGU Fall Meeting, San Francisco, California, December 5-9, 2011

[Conference Presentation/Proceeding Publication -- 223]:

Liu, C., R. L. Panetta, and P. Yang: The pseudospectral time-domain method for light scattering, 2011 AGU Fall Meeting, San Francisco, California, December 5-9, 2011

[Conference Presentation/Proceeding Publication -- 222]:

Huang, X., P. Yang, and G. W. Kattawar: Retrieving Dust Aerosol Aspect Ratio with POLDER/PARASOL Measurements, 2011 AGU Fall Meeting, San Francisco, California, December 5-9, 2011

[Conference Presentation/Proceeding Publication -- 221]:

Sun, B., L. Bi, P. Yang, and G. W. Kattawar: Modeling of light scattering by optically soft particles using the pseudo-spectral time-domain method and a new physical-geometric optics hybrid method, 2011 AGU Fall Meeting, San Francisco, California, December 5-9, 2011

[Conference Presentation/Proceeding Publication -- 220]:

Bi, L., B. Sun, P. Yang, and G. W. Kattawar: Physical-geometric Optics Hybrid Method for the Solution of Light Scattering by Nonspherical Particles, 2011 AGU Fall Meeting, San Francisco, California, December 5-9, 2011

[Conference Presentation/Proceeding Publication -- 219]:

Yang, P., G. W. Kattawar, and L. R. Panetta: Optical properties of nonspherical particles and relevant applications, *Electromagnetic and Light Scattering XIII*, Taormina, Italy, 26-30 September 2011.

[Conference Presentation/Proceeding Publication -- 218]:

Panetta, L. R., C. Liu, and P. Yang: Comparative strengths of a Pseudo-spectral Time Domain Method in Numerical Simulation of single particle optical scattering, *Electromagnetic and Light Scattering XIII*, Taormina, Italy, 26-30 September 2011.

[Conference Presentation/Proceeding Publication -- 217]:

Wang, C. and P. Yang: A fast radiative transfer model for simulating hyper-spectral resolution and narrow band cloudy sky infrared radiances, Progress in Electromagnetics Research Symposium (PIERS), Suzhou, Jiangsu, China, September 12-16, 2011.

[Conference Presentation/Proceeding Publication -- 218]:

Panetta, L. R., C. Liu, and P. Yang: Comparative strengths of a Pseudo-spectral Time Domain Method in Numerical Simulation of single particle optical scattering, Progress in Electromagnetics Research Symposium (PIERS), Suzhou, Jiangsu, China, September 12-16, 2011.

[Conference Presentation/Proceeding Publication -- 215]:

Yang, P., G. W. Kattawar, and R. L. Panetta: Particle optical properties of ice crystals and dust aerosols, Progress in Electromagnetics Research Symposium (PIERS), Suzhou, Jiangsu, China, September 12-16, 2011.

[Conference Presentation/Proceeding Publication -- 214]:

Yang, P., and K. N. Liou, Aspect ratio of airborne dust, Glory Science Team Meeting, New York Cit, NY, August 10-12, 2011.

[Conference Presentation/Proceeding Publication -- 213]:

\*Cole, B., P. Yang, G. Kattawar, B. Baum and J. Riedi, 2011: Towards a combined ground- and satellite based retrieval of the atmospheric state using the Integrated Profiling Technique. Gordon Research Conference: Radiation & Climate, Waterville, ME, July 11-15, 2011.

[Conference Presentation/Proceeding Publication -- 212]:

\*Yi, B., P. Yang and A. Dessler, 2011: Estimation of the clear-sky aerosol radiative effect from CERES and MODIS observations. Gordon Research Conference: Radiation & Climate, Waterville, ME, July 11-15, 2011.

[Conference Presentation/Proceeding Publication -- 211]:

\*Baugher, E., P. Yang, M. Mlynczak, R. Cogeao and K. Bowman, 2011: Comparison between measured and far-infrared spectra. Gordon Research Conference: Radiation & Climate, Waterville, ME, July 11-15, 2011.

[Conference Presentation/Proceeding Publication -- 211]:

\*Liu, C., R. L. Panetta and P. Yang, 2011: The pseudospectral time-domain method for simulation of light scattering of large particles. Gordon Research Conference: Radiation & Climate, Waterville, ME, July 11-15, 2011.

[Conference Presentation/Proceeding Publication -- 210]:

\*Wang, C. X., and P. Yang, Modeling infrared radiation with a fast, high spectral resolution cloudy-sky radiative transfer model. Hyperspectral Imaging and Sounding of the Environment (HISE) meeting, Toronto, Canada, July 10-14, 2011.

[Conference Presentation/Proceeding Publication -- 209]:

Liu, X., A. M. Larar, D. Zhou, S. Kizer, W. Wu, C. Barnet, M. G. Divakarla, G. Guo, W. Blackwell, W. L. Smith, P. Yang, D. Gu, Retrieving atmospheric profiles data in the presence of clouds from hyperspectral remote sensing data. Hyperspectral Imaging and Sounding of the Environment (HISE) meeting, Toronto, Canada, July 10-14, 2011.

[Conference Presentation/Proceeding Publication -- 209]:

Baum, B. A., P. Yang and A. J. Heymsfield, The next generation of ice cloud bulk scattering/absorption models at visible through infrared wavelength. Hyperspectral Imaging and Sounding of the Environment (HISE) meeting, Toronto, Canada, July 10-14, 2011.

[Conference Presentation/Proceeding Publication -- 208]:

Yang, P., A. Dessler, C. Zhou and C. Wang, Study of ice cloud properties using CALIPSO and CALIOP and Imaging Infrared Radiometer (IIR) Observations, CloudSat-CALIPSO Science Team Meeting, Montreal, Canada, June 15-17, 2011.

[Conference Presentation/Proceeding Publication -- 207]:

Baum, B. A., and P. Yang, APS/RSP Cloud Retrievals, APS-2 Justification and Description Study Meeting, New York, NY, May 31-June 1, 2011.

[Conference Presentation/Proceeding Publication -- 206]:

Yang, P., and S. Ding, Validation of CRTM, JCSDA 9<sup>th</sup> Workshop on Satellite data Assimilation, College Park, MD, May 24-25, 2011

[Conference Presentation/Proceeding Publication -- 206]:

Yang, P., Wang C., B. A. Baum, S. E. Platnick, A. K. Heidinger, Y. X. Hu, and R. Holz, 2011: Infrared radiance modeling and its potential applications for retrieving ice cloud properties using MODIS instrument, *2011 MODIS Science Team Meeting*, May 18 - May 20, 2011, Adelphi, Maryland.

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\*Wang C., P. Yang, B. A. Baum, S. E. Platnick, A. K. Heidinger, Y. X. Hu, and R. Holz, 2011: Infrared radiance Modeling and its application to ice cloud retrieval, *2011 MODIS Science Team Meeting*, May 18 - May 20, 2011, Adelphi, Maryland.

[Conference Presentation/Proceeding Publication -- 204]:

\*Yi, B.Q., P. Yang, C.N. Hsu, and S.C. Tsay, 2011: Radiative transfer simulation of dust-like aerosols: uncertainties from particle shape and refractive index, *2011 MODIS Science Team Meeting*, May 18 - May 20, 2011, Adelphi, Maryland.

[Conference Presentation/Proceeding Publication -- 203]:

Yang, P., G. W. Kattawar, L. Bi, and B. A. Baum: Polarimetric properties of airborne dust particles and ice crystals: fundamentals and downstream applications, Workshop on Depolarization, April 7-8, 2011, Droplet Measurement Technologies, Boulder, CO (invited talk).

[Conference Presentation/Proceeding Publication -- 202]:

Yang, P., G. W. Kattawar, and K. N. Liou: Optical properties of airborne dust: The effect of particle's nonsphericity on the single-scattering properties and downstream application, Aerosol Metrology for Climate Workshop, March 14-15, 2011, NIST Campus, Gaithersburg, MD 20899 (invited talk).

- [Conference Presentation/Proceeding Publication -- 201]:  
Cole, B. H., P. Yang, J. Riedi, and B. A. Baum: Microphysical properties of ice clouds from polarization calculations, 2010 AGU Fall Meeting, San Francisco, California, December 13-17, 2010
- [Conference Presentation/Proceeding Publication -- 200]:  
Yi, B., P. Yang, and K. P. Bowman: Observational and modeling studies of aerosol indirect effects, 2010 AGU Fall Meeting, San Francisco, California, December 13-17, 2010
- [Conference Presentation/Proceeding Publication -- 199]:  
Liu, C., R. L. Panetta, and P. Yang: Influence of water coating on the optical scattering properties of fractal aggregates, 2010 AGU Fall Meeting, San Francisco, California, December 13-17, 2010
- [Conference Presentation/Proceeding Publication -- 198]:  
Wang, C., P. Yang, A. K. Heidinger, S. E. Platnick, and B. A. Baum: Retrieving ice cloud properties by using a fast infrared radiative transfer model, 2010 AGU Fall Meeting, San Francisco, California, December 13-17, 2010
- [Conference Presentation/Proceeding Publication -- 197]:  
Baugher, E., P. Yang, K. P. Bowman, M. G. Mlynczak, R. Cageao, and B. A. Baum: Comparison between measured and simulated far-infrared spectra, 2010 AGU Fall Meeting, San Francisco, California, December 13-17, 2010
- [Conference Presentation/Proceeding Publication -- 196]:  
Yang, P., Y. Li, C. X. Wang, B. Baum, S. Platnick, A. Heidinger, and Y. X. Hu, 2010: Study of ice cloud properties from synergetic use of satellite observations and modeling capabilities, International Symposium on the A-Train Satellite Constellation 2010, New Orleans, LA, October 25-28, 2010.
- [Conference Presentation/Proceeding Publication -- 195]:  
Xie, Y., P. Yang, G. W. Kattawar, P. Minnis, Y. X. Hu, and D. L. Wu, 2010: Determination of ice cloud models using MISR and MODIS measurements, International Symposium on the A-Train Satellite Constellation 2010, New Orleans, LA, October 25-28, 2010.
- [Conference Presentation/Proceeding Publication -- 194]:  
Yi, B. Q., P. Yang, N. C. Hsu, and S. C. Tsay, 2010: Global aerosol climatology from the MODIS instrument and model simulations,

International Symposium on the A-Train Satellite Constellation 2010,  
New Orleans, LA, October 25-28, 2010.

- [Conference Presentation/Proceeding Publication -- 193]:  
Cho, H. M., S. Nasiri, P. Yang, I. Laszlo, and X. P. Zhao, 2010:  
Improving MODIS infrared mineral dust detection with spatial variability  
tests, International Symposium on the A-Train Satellite Constellation  
2010, New Orleans, LA, October 25-28, 2010.
- [Conference Presentation/Proceeding Publication -- 192]:  
Bi, L., P. Yang, and G. W. Kattawar, 2010: Backscatter color ratio of ice  
crystals at the wavelengths of 0.532 and 1.064  $\mu\text{m}$ , International  
Symposium on the A-Train Satellite Constellation 2010, New Orleans,  
LA, October 25-28, 2010.
- [Conference Presentation/Proceeding Publication -- 191]:  
Yang, P., 2010: Particle properties in RTM in UV+VIS (invited talk),  
International GEMS (Geostationary Environment Monitoring  
Spectrometer) Workshop, August 23-24, 2010, Seoul, Korea.
- [Conference Presentation/Proceeding Publication -- 190]:  
Yang, P., G. W. Kattawar, B. Baum, Y. Hu, 2010: Study ice clouds and  
aerosols using satellite observations and modeling capabilities, 3<sup>rd</sup> Asia  
Pacafic Radiation Symposium, August 25-28, 2010, Seoul, Korea.
- \*[Conference Presentation/Proceeding Publication -- 189]:  
Yang, P., G. W. Kattawar, \*L. Bi, \*Q. Feng and \*Z. Meng, 2010: Progress  
in the simulation of the optical properties of dust-like aerosol particles,  
13th Conference on Atmospheric Radiation and 13th Conference on Cloud  
Physics, Portland, OR, June 28-July 2, 2010.
- [Conference Presentation/Proceeding Publication -- 188]:  
Minnis, P., S. Sun-Mack, Q. Z. Trepte, F. L. Chang, P. W. Heck, Y. Chen,  
Y. Yi, R. F. Arduini, J. K. Ayers, K. Bedka, S. Bedka, R. R. Brown, S.  
Gibson, E. Heckert, G. Hong, Z. Jin, R. Palikonda, R. Smith, W. L. Smith,  
D. A. Spangenberg, Y. Xie, P. Yang and C. R. Yost, 2010: CERES  
Edition 3 Cloud Retrievals, 13th Conference on Atmospheric Radiation  
and 13th Conference on Cloud Physics, Portland, OR, June 28-July 2,  
2010.
- [Conference Presentation/Proceeding Publication -- 187]:  
Baum, B., P. Yang, and A. J. Heymsfield, 2010: Improvements in the  
Derivation of Bulk Scattering Properties for Ice Clouds at Visible Through  
Far-Infrared Wavelengths, 13th Conference on Atmospheric Radiation and  
13th Conference on Cloud Physics, Portland, OR, June 28-July 2, 2010.



- [Conference Presentation/Proceeding Publication -- 186]:  
Hong, G., P. Minnis, J. K. Ayers, C. R. Yost, W. L. Smith and P. Yang, 2010: Infrared radiance at MODIS bands over a deep convective cloud system during TC4: observations and simulations, 13th Conference on Atmospheric Radiation and 13th Conference on Cloud Physics, Portland, OR, June 28-July 2, 2010.
- \*[Conference Presentation/Proceeding Publication -- 185]:  
\*Xie, Y., P. Yang, P. Minnis, and Y. X. Hu, 2010: Determination of ice cloud models using MISR and MODIS measurements, 13th Conference on Atmospheric Radiation and 13th Conference on Cloud Physics, Portland, OR, June 28-July 2, 2010.
- \*[Conference Presentation/Proceeding Publication -- 184]:  
\*Cho, H. M., S. L. Nasiri, P. Yang, I. Laszlo, X. Zhao, 2010: Using radiative properties to detect mineral dust aerosols over the ocean: A comparison of MODIS and CALIPSO techniques, 13th Conference on Atmospheric Radiation and 13th Conference on Cloud Physics, Portland, OR, June 28-July 2, 2010.
- \*[Conference Presentation/Proceeding Publication -- 183]:  
\*Yi, B.Q., P. Yang, G.W. Kattawar, C. N. Hsu, and S. Tsay, 2010: Radiative Transfer Simulation of Dust-like Aerosols: Uncertainties from Particle Shapes, Refractive Index, and Distributions, 13th Conference on Atmospheric Radiation and 13th Conference on Cloud Physics, Portland, OR, June 28 -July 2, 2010
- \*[Conference Presentation/Proceeding Publication -- 182]:  
\*Ding, S., P. Yang, F. Weng, Q. Liu, Y. Han, P. van Delst, J. Li, B. Baum, 2010: Validation of the Community Radiative Transfer Model, 13th Conference on Atmospheric Radiation and 13th Conference on Cloud Physics, Portland, OR, June 28-July 2, 2010.
- \*[Conference Presentation/Proceeding Publication -- 181]:  
\*Bi, L., P. Yang, and G. W. Kattawar, 2010: Computation of the Optical Properties of Preferably Oriented Ice Crystals from a Combination of the Discrete-Dipole-Approximation and Physical-geometric Optics Hybrid Methods, 13th Conference on Atmospheric Radiation and 13th Conference on Cloud Physics, Portland, OR, June 28-July 2, 2010.
- [Conference Presentation/Proceeding Publication -- 180]:  
Ding, S., P. Yang, F. Weng, Q. Liu, Y. Han, P. van Delst, J. Li, and B. Baum 2010: Validation of the Community Radiative Transfer Model,

JCSDA 8<sup>th</sup> Workshop on Satellite Data Assimilation, May 4-5, 2010,  
University of Maryland at Baltimore County, Halethorpe, MD.

[Conference Presentation/Proceeding Publication -- 179]:

Yang, P., 2010: Progress in the radiative modeling of ice clouds and dust aerosols for MODIS-based remote sensing, MODIS Science Team Meeting, Washington, DC, Jan. 26-28, 2010 (plenary presentation).

[Conference Presentation/Proceeding Publication -- 178]:

Xie, Y. and P. Yang, 2010: Determination of ice cloud models for improving MODIS retrieval of ice cloud properties, MODIS Science Team Meeting, Washington, DC, Jan. 26-28, 2010.

[Conference Presentation/Proceeding Publication -- 177]:

Yi, B., P. Yang, N. Mahowald, C. N. Hsu, and S. Tsay, 2010: Aerosol-cloud-precipitation relationship from MODIS products: a statistical perspective, MODIS Science Team Meeting, Washington, DC, Jan. 26-28, 2010.

[Conference Presentation/Proceeding Publication -- 176]:

Xie, Y., P. Yang, P. Minnis, and Y. X. Hu, 2009: Determination of ice cloud models using MISR measurements, American Geophysical Union 2009 Fall meeting, San Francisco, California, Dec. 14-18, 2009

[Conference Presentation/Proceeding Publication -- 175]:

Yi, B., P. Yang, X. Liu and N. M. Mahowald, 2009: Observation and modeling of dust aerosol effects, American Geophysical Union 2009 Fall meeting, San Francisco, California, Dec. 14-18, 2009

[Conference Presentation/Proceeding Publication -- 174]:

Li, Y., P. Yang, and B. Baum, 2009: Comparisons of Cloud Properties between MODIS Observations and CAM3 Simulations, American Geophysical Union 2009 Fall meeting, San Francisco, California, Dec. 14-18, 2009

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Ding, S., P. Yang, F. Weng, Q. Liu, Y. Han, P. van Delst, 2009: Validation of the Community Radiative Transfer Model, American Geophysical Union 2009 Fall meeting, San Francisco, California, Dec. 14-18, 2009

[Conference Presentation/Proceeding Publication -- 172]:

Meng, Z., P. Yang, G.W. Kattawar, L. Bi, K. N. Liou, and I. Laszlo, 2009: A software package for a database of the single-scattering properties of mineral dust aerosols, American Geophysical Union 2007 Fall meeting, San Francisco, California, Dec. 14-18, 2009

- [Conference Presentation/Proceeding Publication -- 171]:  
Tang, G., R. L. Panetta and P. Yang, Application of Discontinuous Galerkin Method to computation of ice crystal scattering properties in two dimensional geometry, American Geophysical Union 2009 Fall meeting, San Francisco, California, Dec. 14-18, 2009
- [Conference Presentation/Proceeding Publication -- 170]:  
Yang, P., and K. N. Liou, 2009: Recent progress in simulating the optical properties of nonspherical ice crystals and dust aerosols: theories and applications. Progress In Electromagnetic Research Symposium (PIERS), Moscow, Russia, on 18-21 August, 2009.
- \*[Conference Presentation/Proceeding Publication -- 169]:  
Yang, P., S. Ding, and \*Y. Xie, 2009: Development of lookup tables and validation effort in support of CRTM, JCSDA 7<sup>th</sup> Workshop on Satellite Data Assimilation, May 12-13, 2009, University of Maryland at Baltimore County.
- \*[Conference Presentation/Proceeding Publication -- 168]:  
\*Xie, Y., P. Yang, G. W. Kattawar, P. Minnis, and Y. X. Hu, 2009: Uncertainties associated with the scattering properties of ice crystals in CERES-MODIS retrieval of cirrus clouds. CERES Science Team Meeting, April 28-30, 2009, Newport News, VA.
- [Conference Presentation/Proceeding Publication -- 167]:  
Hong, G, and P. Yang, 2009: Identify Opaque and Non-opaque Tropical Upper-Tropospheric Ice Clouds from the MODIS Measurements at 8.5, 11, and 12 micron. CERES Science Team Meeting, April 28-30, 2009, Newport News, VA.
- \*[Conference Presentation/Proceeding Publication -- 166]:  
\*Li, Y., P. Yang, and G. R. North, 2009: Cloud Properties from MODIS, CERES-MODIS and CAM3 Simulation. CERES Science Team Meeting, April 28-30, 2009, Newport News, VA.
- \*[Conference Presentation/Proceeding Publication -- 165]:  
Feng, Q.\*, P. Yang, G. W. Kattawar, C. Hsu, S.-C. Tsay, and I. Laszlo, 2008: The effect of nonsphericity on the scattering and radiative properties of mineral dust aerosols: An application to the Deep Blue aerosol retrieval algorithm, American Geophysical Union 2007 Fall meeting, San Francisco, California, Dec. 15-19, 2008
- \*[Conference Presentation/Proceeding Publication -- 164]:

\*Hong, G., and P. Yang, 2008: Properties of the Infrared radiances at 3.7, 8.5, 11.0 and 12.0- $\mu\text{m}$  wavelengths, American Geophysical Union 2007 Fall meeting, San Francisco, California, Dec. 15-19, 2008

[Conference Presentation/Proceeding Publication -- 163]:

Meyer, K., S. Platnick, P. Yang, and B.-C. Gao, 2008: Cirrus cloud optical thickness from the reflectance measurements in the MODIS 1.38 microwave channel, International Radiation Symposium, Foz do Iguacu, Brazil, August 6, 2008.

\*[Conference Presentation/Proceeding Publication -- 162]:

Dessler, A., P. Yang, \*J. Lee, \*Z. Zhang, \*J. Solbrig, K. Minschwaner, 2008: An analysis of the dependence of top-of-atmosphere outgoing long wave radiation on atmospheric temperature and water vapor, International Radiation Symposium, Foz do Iguacu, Brazil, August 6, 2008.

\*[Conference Presentation/Proceeding Publication -- 161]:

Oraopoulos, L., S. Platnick, \*G. Hong, P. Yang, and B. F. Cahalan, 2008: The shortwave radiative forcing bias of homogeneous liquid and ice clouds observed by MODIS, International Radiation Symposium, Foz do Iguacu, Brazil, August 6, 2008.

\*[Conference Presentation/Proceeding Publication -- 160]:

Yang, P., \*G. Hong, \*Z. Zhang, \*H.-M. Cho, \*Q. Feng, A. Dessler, B. Baum, and J. Riedi, 2008: Lessons learned from study of ice clouds and dust aerosols using MODIS and POLDER observations, MODIS/VIIRS Science Team Meeting, May 14-16, Linthicum, MD

[Conference Presentation/Proceeding Publication -- 159]:

Meyer, K., S. Platnick, P. Yang and B.-C. Gao, 2008: Ice cloud retrievals using the 1.38- $\mu\text{m}$  water vapor band, MODIS/VIIRS Science Team Meeting, May 14-16, Linthicum, MD

[Conference Presentation/Proceeding Publication -- 158]:

Baum, B., P. Yang, A. Heymsfield, and C. Schmitt, 2008: Refinement of bulk scattering models for the remote sensing of ice clouds, MODIS/VIIRS Science Team Meeting, May 14-16, Linthicum, MD

\*[Conference Presentation/Proceeding Publication -- 157]:

\*Zhang, Z., P. Yang, J. Riedi, B. Baum and S. Platnick, 2008: A comparison of cirrus clouds retrieved from POLDER-3/PARASOL and MODIS/AQUA, MODIS/VIIRS Science Team Meeting, May 14-16, Linthicum, MD

\*[Conference Presentation/Proceeding Publication -- 156]:

Yang, P., A. Dessler, and \*G. Hong, 2008: Optical properties and radiative forcing of contrails. *Aviation-Climate Change Research Initiative (ACCRI) Science Meeting*, February 25-27, Virginia Beach, VA.

\*[Conference Presentation/Proceeding Publication -- 155]:

\*Zhang, Z. and P. Yang, 2008: How sensitive are radiative properties of ice clouds in CAM3.0 to the ice crystal habit, inclusions and surface roughness? 88th AMS Annual Meeting, January 20-24, New Orleans, LA.

[Conference Presentation/Proceeding Publication -- 154]:

Chang, F.-L., P. Minnis, B. Lin, R. Palikonda, M. Khaiyer, S. Sun-Mack, and P. Yang, 2008: Retrieving cloud properties for multilayered clouds using simulated GOES-R data, 88th AMS Annual Meeting, January 20-24, New Orleans, LA.

\*[Conference Presentation/Proceeding Publication -- 153]:

\*Hong, G., P. Yang, B. A. Baum, A. J. Heymsfield, 2008: Parameterization of Shortwave and Longwave Radiative Properties of Ice Clouds for Climate Models, 88th AMS Annual Meeting, January 20-24, New Orleans, LA.

\*[Conference Presentation/Proceeding Publication -- 152]:

Yang, P., G. W. Kattawar, \*G. Hong, P. Minnis, Y. Hu, 2007: Effect of The Surface Texture Of Ice Particles On The Retrieval Of Cirrus Properties, American Geophysical Union 2007 Fall meeting, San Francisco, California, Dec. 10-14, 2007

\*[Conference Presentation/Proceeding Publication -- 151]:

\*You, Y., G. W. Kattawar, P. Yang, 2007: The Nature of the Radiance and Polarization in Deep Oceans, American Geophysical Union 2007 Fall meeting, San Francisco, California, Dec. 10-14, 2007

\*[Conference Presentation/Proceeding Publication -- 150]:

\*Zhai, P., G. W. Kattawar, P. Yang, 2007: The Hybrid Matrix Operator - Monte Carlo Method for Solving the 3D Vector RTE in Atmosphere-Ocean Systems, American Geophysical Union 2007 Fall meeting, San Francisco, California, Dec. 10-14, 2007

\*[Conference Presentation/Proceeding Publication -- 149]:

\*Bi, L., G. Chen, P. Yang, G. W. Kattawar, 2007: Light Scattering by Nonspherical ice Crystals: Comparison of Pseudo-spectral Time Domain and Discrete Dipole Approximation Methods, American Geophysical Union 2007 Fall meeting, San Francisco, California, Dec. 10-14, 2007

- \*[Conference Presentation/Proceeding Publication -- 148]:  
\*Xie, Y., P. Yang, G. W. Kattawar, 2007: Modeling of Single Scattering by Inhomogeneous Hexagonal Ice Crystals, American Geophysical Union 2007 Fall meeting, San Francisco, California, Dec. 10-14, 2007
- \*[Conference Presentation/Proceeding Publication -- 147]:  
\*Feng, Q., P. Yang, G. W. Kattawar, L. Laszlo, 2007: Study of Light Scattering and Reflectance by an Atmosphere with Nonspherical Mineral Dust Aerosols, American Geophysical Union 2007 Fall meeting, San Francisco, California, Dec. 10-14, 2007
- [Conference Presentation/Proceeding Publication -- 146]:  
Meyer, K., P. Yang, B.-C. Gao, 2007: Ice Cloud Optical Depth from MODIS Cirrus Reflectance, American Geophysical Union 2007 Fall meeting, San Francisco, California, Dec. 10-14, 2007
- \*[Conference Presentation/Proceeding Publication -- 145]:  
Dessler, A. E., P. Yang, \*J. Solbrig, \*J. Lee, K. Minschwaner, 2007: A comparison of clear-sky OLR between CERES measurements and model calculations and the dependence of OLR on temperature and water vapor, American Geophysical Union 2007 Fall meeting, San Francisco, California, Dec. 10-14, 2007
- \*[Conference Presentation/Proceeding Publication -- 144]:  
\*Zhang, F., P. Yang, G. W. Kattawar, Y. Hu, 2007: Scattering properties of horizontally oriented hexagonal plates, American Geophysical Union 2007 Fall meeting, San Francisco, California, Dec. 10-14, 2007
- [Conference Presentation/Proceeding Publication -- 143]:  
Zhou, D. K., X. Liu, A. M. Larar, W. L. Smith, P. Schlüssel, P. Yang, L. Strow, 2007: Atmospheric and surface/cloud parameters retrieved from satellite hyperspectral infrared sounder measurements, American Geophysical Union 2007 Fall meeting, San Francisco, California, Dec. 10-14, 2007
- [Conference Presentation/Proceeding Publication -- 142]:  
Hu, Y., M. Vaughan, P. Yang, C. Trepte, D. Winker, 2007: Scattering Theory for Lidar Remote Sensing Applications: Progress and Challenge, American Geophysical Union 2007 Fall meeting, San Francisco, California, Dec. 10-14, 2007
- \*[Conference Presentation/Proceeding Publication -- 141]:  
\*Cho, H., P. Yang, G. W. Kattawar, Y. Hu, P. Minnis, D. Winker, 2007: Relation Between Backscatter and Depolarization Ratio for ISCCP Cloud Types On the Basis of Collocated MODIS and CALIPSO products,

American Geophysical Union 2007 Fall meeting, San Francisco, California, Dec. 10-14, 2007

\*[Conference Presentation/Proceeding Publication -- 140]:

\*Zhang, Z., P. Yang, J. Riedi, G. W. Kattawar, 2007: A Comparison of Cirrus Clouds Retrieved From POLDER-3/PARASOL and MODIS/Aqua, American Geophysical Union 2007 Fall meeting, San Francisco, California, Dec. 10-14, 2007

\*[Conference Presentation/Proceeding Publication -- 139]:

\*Hong, G., P. Yang, A. Heymsfield, B. A. Baum, H. Huang, Y. Hu, 2007: Parameterization of Shortwave and Longwave Radiative Properties of Ice Clouds for Use in Climate Models, American Geophysical Union 2007 Fall meeting, San Francisco, California, Dec. 10-14, 2007

\*[Conference Presentation/Proceeding Publication -- 138]:

Wong, S., A. E. Dessler, N. Mahowald, P. Yang, \*Q. Feng, 2007: Atmospheric Heating by Saharan Dust and Its Implication on the Temperature Profiles over the Tropical Cyclone Main Development Region, American Geophysical Union 2007 Fall meeting, San Francisco, California, Dec. 10-14, 2007

\*[Conference Presentation/Proceeding Publication -- 137]:

Jin, Z., T. Charlock, P. Yang, \*Y. Xie, 2007: Snow Optical Properties for Different Particle Shapes with Application to Snow Grain Size Retrieval and Simulation of MODIS/CERES Radiances Over the Antarctic Plateau, American Geophysical Union 2007 Fall meeting, San Francisco, California, Dec. 10-14, 2007

\*[Conference Presentation/Proceeding Publication -- 136]:

\*Ding, S., P. Yang, A. Heidinger, M. Pavolonis, B. A. Baum, H. A. Huang, 2007: ABI Solar Channel Bidirectional Reflectance Simulation, American Geophysical Union 2007 Fall meeting, San Francisco, California, Dec. 10-14, 2007

[Conference Presentation/Proceeding Publication -- 135]:

Nowotnick, E. P., P. R. Colarco, A. da Silva, A. M. Colarco, P. Yang, J. A. Smith, 2007: Use of Combined A-Train Observations to Validate GEOS Model Simulated Dust Distributions During NAMMA, American Geophysical Union 2007 Fall meeting, San Francisco, California, Dec. 10-14, 2007

\*[Conference Presentation/Proceeding Publication -- 134]:

Yang, P., \*G. Hong, \*J. Niu, B. A. Baum, H.-L. Huang, P. Minnis, S. Platnick, A. Heidinger, and M. Pavolonis, 2007: Development of the

single-scattering properties and lookup tables for GOES-R ABI. *Annual GOES-R AWG Conference*, Lansdowne, VA, May 15-18, 2007.

\*[Conference Presentation/Proceeding Publication -- 133]:

Yang, P., A. Dessler, \*J. Lee, \*K. Meyer, \*Z. Zhang, and B.-C. Gao, 2007: Study of the radiative effect of thin cirrus clouds using CERES, MODIS and AIRS data. *7<sup>th</sup> CERES-II Science Team Meeting*, Newport News, VA, April 24-26, 2007.

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high-spectral-resolution radiance measurements, AGU Joint Assembly, May 17-21, 2004, Montreal, Canada.

\*[Conference Presentation/Proceeding Publication --40]:

Yang, P. M. G. Mlynczak, \*H. Wei, H. Huang, D. Kratz, B. A. Baum, Y. Hu, W. Wiscombe, A. Heidinger, and M. I. Mishcheno, 2004: The radiative properties of ice clouds in the far-infrared spectrum: a sensitivity study from remote sensing perspective, AGU Joint Assembly, May 17-21, 2004, Montreal, Canada.

\*[Conference Presentation/Proceeding Publication --39]:

\*Meyer, K., P. Yang, B.-C. Gao, W. Wiscombe, and Y. Hu, 2004: Microphysical and optical properties of ice clouds derived from the Airborne Visible/Infrared Imaging Spectrometer measurements, AGU Joint Assembly, May 17-21, 2004, Montreal, Canada.

\*[Conference Presentation/Proceeding Publication --38]:

Yang, P., M. G. Mlynczak, \*H. Wei, D. Kratz, B. A. Baum, Y. X. Hu, W. J. Wiscombe, A. Heidinger, and M. I. Mishchenko, 2004: Potential advantages of using the Far-Infrared spectral signature for studying ice clouds, 84<sup>th</sup> American Meteorological Society Annual Meeting, January 11-15, 2004, Seattle, Washington

\*[Conference Presentation/Proceeding Publication --37]:

Huang, H.-L., P. Yang, \*H.-L. Wei, B. A. Baum, Y.-X. Hu, P. Antonelli, S. A. Ackerman, 2004: Hyperspectral infrared ice cloud property retrieval demonstration theoretical and case study analysis, 84<sup>th</sup> American Meteorological Society Annual Meeting, January 11-15, 2004, Seattle, Washington.

\*[Conference Presentation/Proceeding Publication --36]:

\*Wei, H., P. Yang, J. Li, H.-L. Huang, B. Baum, and F. Sun, 2004: Study the microphysical and optical properties of cirrus clouds from Atmospheric Infrared Sounder (AIRS) measurements, 84<sup>th</sup> American Meteorological Society Annual Meeting, January 11-15, 2004, Seattle, Washington

\*[Conference Presentation/Proceeding Publication --35]:

\*Shoemake, M., L. Panetta, P. Yang, and B.-C. Gao, 2004: Global seasonal variations of cirrus clouds using the Terra MODIS instrument, 84<sup>th</sup> American Meteorological Society Annual Meeting, January 11-15, 2004, Seattle, Washington

\*[Conference Presentation/Proceeding Publication --34]:

\*Meyer, K., P. Yang, and B.-C. Gao, 2004: Study of tropical cirrus clouds from Moderate Resolution Imaging Spectroradiometer (MODIS) measurements, 84<sup>th</sup> American Meteorological Society Annual Meeting, January 11-15, 2004, Seattle, Washington

\*[Conference Presentation/Proceeding Publication --33]:

\*Meyer, K., P. Yang, B.-C. Gao, and W. Wiscombe, 2004: Microphysical and optical properties of cirrus clouds from airborne near-infrared measurements, 84<sup>th</sup> American Meteorological Society Annual Meeting, January 11-15, 2004, Seattle, Washington

\*[Conference Presentation/Proceeding Publication --32]:

\*Lawless, R., P. Yang, B.-C. Gao, and W. Wiscombe, 2004: Water Vapor and Cirrus Clouds over the Western United States, 84<sup>th</sup> American Meteorological Society Annual Meeting, January 11-15, 2004, Seattle, Washington

\*[Conference Presentation/Proceeding Publication --31]:

\*Guo, G., P. Yang, Y. X. Hu, and M. G. Mlynczak, 2004: Impact of sub-visible thin cirrus on longwave radiation energy budget, 84<sup>th</sup> American Meteorological Society Annual Meeting, January 11-15, 2004, Seattle, Washington

\*[Conference Presentation/Proceeding Publication --30]:

\*Guo, G., Q. Ji, P. Yang, and S.-C. Tsay, 2004: The study of cirrus clouds using ground-based high spectral resolution infrared measurements, 84<sup>th</sup> American Meteorological Society Annual Meeting, January 11-15, 2004, Seattle, Washington

\*[Conference Presentation/Proceeding Publication --29]:

Yang, P., Q. Ji, \*G. Guo, and S. Tsay, 2003: Development of an algorithm for studying the tropical cirrus properties from CRYSTAL-FACE ground-based infrared measurements, American Geophysical Union 2003 Fall Meeting, December 8-12, 2003, San Francisco, California

[Conference Presentation/Proceeding Publication --28]:

Pilewskie, P., H. Guan, S. Platnick, P. Yang, R. Bergstrom, and M. Wendisch, 2003: Retrieval of cirrus properties from solar spectral irradiance during CRYSTAL-FACE, American Geophysical Union 2003 Fall Meeting, December 8-12, 2003, San Francisco, California

[Conference Presentation/Proceeding Publication --27]:

Chepfer, H., P. Minnis, L. Nguyen, and P. Yang, 2003: Dual-satellite retrievals of tropical ice cloud particle shapes and IWC during CRYSTAL-FACE: comparisons with in-situ and ground site observations,

American Geophysical Union 2003 Fall Meeting, December 8-12, 2003,  
San Francisco, California

[Conference Presentation/Proceeding Publication --26]:

Ji, Q., P. Yang, S.-C. Tsay, J. R. Campbell, S. Gasso, G. Guo, Y. Han, T.-H. Hsieh, N. C. Hsu, and C. Seftor, 2003: Smart Ground-based Remote sensing and modeling studies of cirrus clouds during CRYSTAL-FACE, CRYSTAL-FACE Science Team Meeting, February 24-28, 2003, Slat Lake City, Utah.

[Conference Presentation/Proceeding Publication --25]:

Yang, P., 2003: Cloud & Cloud property modeling, GIFTS-MURI workshop, May 27-28, 2003, Madison, Wisconsin.

[Conference Presentation/Proceeding Publication --24]:

Massie, S., A. Lambert, J. Gille, P. Yang, and E. Jensen, 2003: Cirrus Cloud Field for HIRDLS Applications, AURA Science Team Meeting, March 17-21, 2003, Greenbelt, MD.

[Conference Presentation/Proceeding Publication --23]:

Hu, Y., P. Yang, and co-authors, 2003: Multi-angle CERES Programmable Azimuth Plane Scans Measurements at CRYSTAL-FACE, CRYSTAL-FACE Science Meeting, February 23-28, Salt Lake City, Utah.

[Conference Presentation/Proceeding Publication --22]:

Yang, P., K. N. Liou, 2002: Light Scattering and Radiative Transfer in Ice clouds, The International Symposium on Atmospheric Remote Sensing and Modeling, Beijing, China, August 19-23, 2002.

[Conference Presentation/Proceeding Publication --21]:

Yang, P., B. A. Baum, H.-L. Huang, S.-C. Tsay, B.-C. Gao, Y. Hu, S. A. Ackerman, and A. Heymsfield, 2002: Optical properties of quasi-spherical particles, 11<sup>th</sup> confence on Atmospheric Radiation, June 3-7, 2002, Ogden, Utah.

[Conference Presentation/Proceeding Publication --20]:

Baum, B. A., P. Yang, A. Heymsfield, S. Thomas, and S. L. Nasiri, 2002: Development of cirrus scattering models from POLAR, Midlatitude, and tropical in-situ measurements, 11<sup>th</sup> confence on Atmospheric Radiation, June 3-7, 2002, Ogden, Utah.

[Conference Presentation/Proceeding Publication --19]:

Yang, P., B. A. Baum, H.-L. Huang, S. Platnick, Y. Hu., D. M. Winker, A. J. Baran, and P. N. Francis, 2002: Single and multiple scattering/absorption properties of pristine ice crystals and polycrystals in

the terrestrial window region, 11<sup>th</sup> confence on Atmospheric Radiation, June 3-7, 2002, Ogden, Utah.

[Conference Presentation/Proceeding Publication --18]:

Chou, M.-D., K.-T. Lee, and P. Yang, 2002: Parameterization of cloud optical properties for a mixture of ice particles, 11<sup>th</sup> confence on Atmospheric Radiation, June 3-7, 2002, Ogden, Utah

[Conference Presentation/Proceeding Publication --17]:

McFarquhar, G. M., P. Yang, A. Macke, A. Baran, S. F. Iacobellis, and R. C. J. Somerville, 2002: Parameterizations of solar single-scattering radiative properties for tropical ice clouds. 11<sup>th</sup> confence on Atmospheric Radiation, June 3-7, 2002, Ogden, Utah

[Conference Presentation/Proceeding Publication --16]:

Gao, B.-C., P. Yang, and W. Wiscombe, 2002: Retrieve cirrus cloud reflectance using visible and 1.38  $\mu\text{m}$  bands, 11<sup>th</sup> conference on Atmospheric Radiation, June 3-7, 2002, Ogden, Utah

[Conference Presentation/Proceeding Publication --15]:

Baum, B. A., S. L. Nasiri, P. Yang, 2002: Progress in the detection and analysis of multilayered clouds: comparison of MODIS retrieval with ARM CART site data, 11<sup>th</sup> conference on Atmospheric Radiation, June 3-7, 2002, Ogden, Utah

[Conference Presentation/Proceeding Publication --14]:

Gao, B. C., P. Yang, Y. J. Kaufman, 2002: Regional and global variations of water vapor and high clouds inferred from two years measurements with MODIS near-IR channels, IGARSS, June 24-28, 2002, Toronto, Canada

[Conference Presentation/Proceeding Publication --13]:

Yang, P., Y. X. Hu, J. Zhao, D. M. Winker, C. A. Hostetler, B. A. Baum, S.-C. Tsay, B.-C. Gao, M. I. Mishchenko, and J. E. Pasciak, 2002: The enhancement of lidar backscattering by horizontally oriented ice crystal plates in cirrus clouds. IGARSS, June 24-28, 2002, Toronto, Canada

[Conference Presentation/Proceeding Publication --12]:

Yang, P., K. N. Liou, B.-C. Gao, B. A. Baum, W. J. Wiscombe, H.-L. Huang, Y. X. Hu, and A. J. Baran, 2002: Light scattering and radiative transfer in ice clouds: Applications to remote sensing research, SPIE's Third International Asia-Pacific Environmental Remote Sensing Symposium, October 23-27, Hangzhou, China, 2002.

[Conference Presentation/Proceeding Publication --11]:

Gao, B.-C., P. Yang, Y. I. Kaufman, and W. J. Wiscombe, 2002: Seasonal and Global variations of water vapor and high clouds observed with MODIS and near-IR channels. SPIE's Third International Asia-Pacific Environmental Remote Sensing Symposium, October 23-27, Hangzhou, China, 2002.

[Conference Presentation/Proceeding Publication --10]:

Liou, K. N., Y. Takano, S. C. Ou, and P. Yang, 2002: Application of electromagnetic scattering by nonspherical particles to remote sensing of clouds and aerosols, PIERS (Progress in Electromagnetic Research Symposium) 2002 July 1-5, 2002 Cambridge, Massachusetts.

[Conference Presentation/Proceeding Publication --9]:

Baran, A. J., P. N. Francis, P. Yang, and S. Haveman, 2002: Simulation of scattering from ice aggregates using size/shape distributions of ice cylinders: An application of T-matrix, *Proceedings of the Sixth International Conference on "Electromagnetic and Light Scattering by Nonspherical Particles: Theory, Measurements, and Applications"*, March 4-8, 2002, Gainesville, Florida.

[Conference Presentation/Proceeding Publication --8]:

Yang, P., Y. X. Hu, B. A. Baum, H.-L. Huang, S.-C. Tsay, S. Ackerman, and A. J. Heymsfield, 2002: Single-scattering properties of droxtals, *Proceedings of the Sixth International Conference on "Electromagnetic and Light Scattering by Nonspherical Particles: Theory, Measurements, and Applications"*, March 4-8, 2002, Gainesville, Florida.

[Conference Presentation/Proceeding Publication --7]:

Yang, P., B. A. Baum, H.-L. Huang, S. Plattnick, Y. X. Hu, D. M. Winker, A. J. Baran, and P. N. Francis, 2002: Single and multiple scattering/absorption properties of pristine ice crystals and polycrystals in the terrestrial window region, *Proceedings of the Sixth International Conference on "Electromagnetic and Light Scattering by Nonspherical Particles: Theory, Measurements, and Applications"*, March 4-8, 2002, Gainesville, Florida.

[Conference Presentation/Proceeding Publication --6]:

Baum, B. A., S. L. Nasiri, and P. Yang, 2001: Global and regional cloud properties derived from MODIS data. Presented at the 2001 ARM Science Team Meeting held March 19-23, 2001 in Atlanta, GA.

[Conference Presentation/Proceeding Publication --5]:

Baum, B. A., S. L. Nasiri, and P. Yang, 2000: Daytime overlapping cloud detection. Presented at the ARM science team meeting, March 13-17, 2000.



[Conference Presentation/Proceeding Publication --4]:

Baran, A. J., S. Havemann, P. N. Francis, and P. Yang, 2000: An investigation of tunneling on nonspherical particles in random and preferred orientation using exact T-matrix theory and aircraft observations of cirrus, *Light Scattering by Nonspherical Particles: Halifax Contributions*, 28 August – September 1, 2000, Halifax, Canada.

[Conference Presentation/Proceeding Publication --3]:

Baran, A. J., S. Havemann, P. N. Francis, and P. Yang, 2000: Rapid computation of optical properties for nonspherical particles: Application to aircraft studies of cirrus, *Light Scattering by Nonspherical Particles: Halifax Contributions*, 28 August – September 1, 2000, Halifax, Canada.

[Conference Presentation/Proceeding Publication --2]:

Liou, K. N., Y. Takano, and P. Yang, 1998: Light scattering and radiative transfer in ice crystal clouds: Application to climate research, *Conference on Light Scattering by Nonspherical Particles: Theory, Measurements, and Applications*, 29 September–1 October, 1998, New York, New York.

[Conference Presentation/Proceeding Publication --1]:

Yang, P. and K. N. Liou, 1998: Application of finite-difference time domain technique to light scattering by irregular and inhomogeneous particles, *Conference on Light Scattering by Nonspherical Particles: Theory, Measurements, and Applications*, 29 September–1 October, 1998, New York, New York.

## **Invited Talks**

- [Invited Talk – 26]: Yang, P., and G. W. Kattawar, 2012: Light scattering and radiative transfer: fundamentals, applications and reminiscences, Department of Earth & Atmospheric Sciences, University of Nebraska-Lincoln, March 2, 2012.
- [Invited Talk – 25]: Yang, P., and G. W. Kattawar, 2011: Optical properties of dust aerosols and ice crystals – Fundamentals and downstream applications, Meteorological Institute Munich, Ludwig-Maximilians-University Munich, September 30, 2011.
- [Invited Talk -- 24]: Yang, P., and G. W. Kattawar, 2010: Atmospheric Optics and Radiation: History, Application, and Inspiration, Department of Atmospheric, Oceanic and Space Sciences, University of Michigan, Dec. 9, 2010.
- [Invited Talk -- 23]: Yang, P., and G. W. Kattawar, 2010: Atmospheric Optics and Radiation: History, Application, and Inspiration, Department of Atmospheric Sciences, University of Wyoming, Nov. 2, 2010.
- [Invited Talk -- 22]: Yang, P., 2010: Light Scattering and Radiative Transfer in the Atmosphere, Leipzig Institute for Meteorology (LIM), University of Leipzig, Germany, Oct. 7, 2010.
- [Invited Talk -- 21]: Yang, P., and G. W. Kattawar, 2009: Applications of radiative transfer calculations to satellite remote sensing of the atmosphere, School of Earth and Environmental Sciences, Seoul National University, South Korea, Nov. 2, 2009.
- [Invited Talk -- 30]: Yang, P., and G. W. Kattawar, 2009: Applications of radiative transfer calculations to satellite remote sensing of the atmosphere, Department of Atmospheric Sciences, National Central University, Oct. 30, 2009.
- [Invited Talk -- 29]: Yang, P., and G. W. Kattawar, 2009: Atmospheric Optics and Radiation: History, Application, and Inspiration, Department of Atmospheric Sciences, National Central University, Oct. 30, 2009.
- [Invited Talk -- 28]: Yang, P., and G. W. Kattawar, 2009: Applications of radiative transfer calculations to satellite remote sensing of the atmosphere, Department of Atmospheric Sciences, National Taiwan University, Oct. 29, 2009.

- [Invited Talk -- 27]: Yang, P., and G. W. Kattawar, 2009: Atmospheric Optics and Radiation: History, Application, and Inspiration, Department of Atmospheric Sciences, National Taiwan University, Oct. 29, 2009.
- [Invited Talk -- 26]: Yang, P., and G. W. Kattawar, 2009: On the single scattering and radiative processes in the atmosphere, Department of Atmospheric Sciences, North Dakota University, Sept. 17, 2009.
- [Invited Talk -- 25]: Yang, P., and G. W. Kattawar, 2009: Historical perspective of single and multiple scattering of radiation, Department of Meteorology, Florida State University, Sept. 10, 2009.
- [Invited Talk -- 24]: Yang, P., and G. W. Kattawar, 2009: Atmospheric Optics and Radiation: History, Applications and Inspiration, Department of Atmospheric Sciences, University of Alabama in Huntsville, Sept. 2, 2009.
- [Invited Talk -- 23]: Yang, P., and G. W. Kattawar, 2009: Historical Perspective of Single and Multiple Scattering of Atmospheric Radiation, Department of Earth & Atmospheric Sciences, Purdue University, March 5, 2009.
- [Invited Talk -- 22]: Yang, P., and G. W. Kattawar, 2008: The Everest Is There, Department of Atmospheric Sciences, The University of Washington, Seattle, WA, October 10, 2008.
- [Invited Talk -- 21]: Yang, P., and G. W. Kattawar, 2008: The Everlasting Flame, Department of Atmospheric and Oceanic Sciences, The University of Wisconsin, Madison, WI, September 15, 2008.
- [Invited Talk -- 20]: Yang, P., and G. W. Kattawar, 2008: The Everest Is There, Department of Atmospheric Sciences, The University of Arizona, Tucson, AZ, September 4, 2008.
- [Invited Talk -- 19]: Yang, P., and G. W. Kattawar, 2008: Radiative Transfer and Light Scattering: From Cradle to Adolescence, International Radiation Symposium, Foz do Iguacu, Brazil, August 6, 2008.
- [Invited Talk -- 18]:  
Yang, P., 2007: Light Scattering and Radiative Transfer: History, Some Recent Progress, and Applications to Remote Sensing and Radiative Forcing Studies, the National Institute of Aerospace, Hampton, VA, October 3, 2007.

[Invited Talk -- 17]:

Yang, P., 2007: Light scattering and radiative transfer, History, Some Recent Progress, and Applications to Remote Sensing and Radiative Forcing Studies, Laboratoire d'Optique Atmosphérique, Université de Lille 1, Lille, France, 27 June 2007.

[Invited Talk -- 16]:

Yang, P., 2007: Light scattering and radiative transfer: Applications to remote sensing implementation and radiative forcing simulation, NASA Goddard Space Flight Center, Greenbelt, Maryland, 24 January 2007.

[Invited Talk -- 15]:

Yang, P., 2006: Light scattering and radiative transfer in ice clouds: applications to remote sensing and radiative forcing simulations, Center for Atmospheric and Oceanic Studies, Graduate School of Science, Tohoku University, Sendai, Japan, 21 December 2006.

[Invited Talk -- 14]:

Yang, P., 2006: Study of Ice Clouds: From single-scattering properties to radiative forcing, Center for Climate System Research, University of Tokyo, Japan, 18 December 2006.

[Invited Talk -- 13]:

Yang, P., 2006: Light Scattering and Radiative Transfer in the Atmosphere. Institute of Atmospheric Physics, Chinese Academy of Sciences, Beijing, China, 28 July 2006.

[Invited Talk -- 12]:

Yang, P., 2004: On Atmospheric Radiative Transfer and Light Scattering: Historical Sketch and Applications, Peking University, Beijing, China, December 22, 2004

[Invited Talk -- 11]:

Yang, P., 2004: Study of Light Scattering and Radiative Transfer Processes associated with Cirrus Clouds, Institute of Weather Study, Chinese Academy of Meteorological Sciences, Beijing, China, December 20, 2004

[Invited Talk -- 10]:

Yang, P., 2004: Light Scattering and Radiative Transfer, Department of Atmospheric & Environmental Sciences, Kangnung University, Kangnung City, South Korea, Dec. 16, 2004.

[Invited Talk -- 9]:

Yang, P., 2004: Study of Cirrus Cloud Properties from Remote Sensing Perspective, Seoul National University, Seoul, South Korea, December 13, 2004

[Invited Talk -- 8]:

Yang, P., 2004: Light scattering and radiative transfer: historical sketch and applications to spaceborne remote sensing, College of Oceanic & Atmospheric Sciences, Oregon State University, December 2, 2004.

[Invited Talk -- 7]:

Yang, P., 2004: Study of Cirrus Clouds: Single-Scattering, Radiative Transfer, and Remote Sensing, School of Meteorology, University of Oklahoma, September 27, 2004.

[Invited Talk -- 6]:

Yang, P., 2004: Cloud Modeling & Property Retrieval, the 4<sup>th</sup> Workshop on Hyperspectral Science of UW-Madison MURI, GIFTS, and GOES-R, 27-28 April, 2004.

[Invited Talk -- 5]:

Yang, P., 2002: Light scattering and radiative transfer in ice clouds: applications to Remote sensing Research, Mesoscale and Microscale Meteorology Division, National Center for Atmospheric Research, September 26, 2002.

[Invited Talk -- 4]:

Yang, P., 2002: Study of Ice Clouds, Department of Atmospheric Sciences, Nanjing University, Nanjiang, China, August 26, 2002.

[Invited Talk -- 3]:

Yang, P., 2002: Remote Sensing of Clouds. Nanjing Institute of Geography & Limnology, Chinese Academy of Science, Nanjing, China, August 25, 2002.

[Invited Talk -- 2]:

Yang, P. and K. N. Liou, 2002: Radiative Properties of Ice Crystals within cirrus clouds: Effect of particle morphology and size, PIERS (Progress in Electromagnetic Research Symposium) 2002, Cambridge, Massachusetts, July 1-5, 2002.

[Invited Talk -- 1]:

Yang, P., 2001: Numerical Modeling of Light Scattering by Nonspherical Particles Using Finite-Difference Time Domain Method and Ray-Tracing

Technique, Department of Mathematics, November 28, 2001, College Station, Texas.