

FENG XU

Address University of Oklahoma Office Phone: +1-405-325-2860
School of Meteorology Fax: +1-405-325-7689
120 David L. Boren Blvd. Suite #5936 Email: fengxu@ou.edu
Norman, OK 73072, USA Web: <http://fengxu.oucreate.com/>

EDUCATION

2008 PhD - Physics
University of Rouen Normandy, France

2002 B. Eng. - Thermal Engineering
University of Shanghai for Science and Technology, China

PROFESSIONAL EXPERIENCE

2019 – University of Oklahoma
Associate Professor, School of Meteorology
Adjunct Faculty, School of Electrical & Computer Engineering

2017 – 2019 California Institute of Technology
Scientist - Level IV, Jet Propulsion Laboratory

2013 – 2017 California Institute of Technology
Scientist - Level III, Jet Propulsion Laboratory

2012 – 2013 University of California, Los Angeles
Assistant Researcher, Joint Institute for Regional Earth System Science and Engineering

2010 – 2012 California Institute of Technology
NASA Postdoc Program Scholar, Jet Propulsion Laboratory

2008 – 2010 Technical University of Darmstadt, Germany
Alexander von Humboldt Postdoc Scholar, Institute of Fluid Mechanics & Aerodynamics

EDITORSHIP:

2021 – *Editor*, Journal of the Atmospheric Sciences

2020 – *Associate Editor*, Journal of Quantitative Spectroscopy and Radiative Transfer

2020 – *Editor*, Advances in Atmospheric Sciences

2020 – *Associate Editor*, Frontiers in Remote Sensing

2019 – 2021 *Topical Editor*, Remote Sensing

SCIENTIFIC PUBLICATIONS (complete list in the end)

Total peer-reviewed publications: 68

H-Index: 31 [Google Scholar]

Number of citations: ~2800

See the following links for details:

Google: <https://scholar.google.com/citations?user=oQIw7GsAAAAJ&hl=en>

SELECTED AWARDS

- | | |
|------|--|
| 2023 | Presidential Travel Award, University of Oklahoma |
| 2022 | Top 20 reviewers of the journal - <i>Remote Sensing of Environment</i> (RSE)
<i>for high-quality review which contributed to the success of the journal</i> |
| 2020 | NASA Group Achievement Award
<i>for outstanding scientific achievement of ORACLES airborne Earth science mission team</i> |
| 2018 | NASA Early Career Achievement Medal
<i>for outstanding early-career achievement on light scattering and atmospheric radiation theories, and application in polarimetric remote sensing of aerosols and clouds</i> |
| 2018 | JPL Team Award
<i>for recognition of outstanding work for MAIA Project PDR Team</i> |
| 2017 | NASA Group Achievement Award
<i>for exceptional AirMSPI science planning, sensor operations, ground support, calibration, and data processing during the Calwater-2, RADEX, ImPACT-PM, and ORACLES campaigns</i> |
| 2016 | Elsevier Peter C. Waterman Award
<i>for outstanding work on developing electromagnetic scattering theory and its applications</i> |
| 2016 | JPL Voyager Award
<i>for an innovative joint aerosol and water-leaving radiance retrieval method for ocean color remote sensing</i> |
| 2016 | JPL Team Award
<i>for recognition of outstanding contribution and teamwork leading to the selection of MAIA as a NASA Earth Venture Instrument Mission</i> |
| 2010 | NASA Postdoc Program Fellowship |
| 2008 | Alexander von Humboldt Postdoc Research Fellowship |
| 2004 | French Government Fellowship |

FUNDED RESEARCH PROJECTS:

CURRENT:

1. **PI** - Level 2 aerosol retrieval algorithm development for Multi-Angle Imager for Aerosols (MAIA). NASA Jet Propulsion Laboratory. Project period: 2020-2025. \$545K. 1 month/year.
2. **PI** - Mitigating the Impact of COVID and Launch Delay on Level-2 Aerosol Retrieval Algorithm Development for MAIA Mission. NASA Jet Propulsion Laboratory. Project period: 2022-2025. \$96K. 0.5 month/year.
3. **PI** - Collaborative Research: Observational and numerical modeling studies of rain microphysics. NSF. Project period: 2019-2023. \$319K. 1 month/year (since 2022).
4. **PI** - Enhancing AirMSPI retrievals in dusty conditions using ground-based and airborne measurements. NASA Jet Propulsion Laboratory. Project period: 2022-2023. \$24K. 1 month/year
5. **Co-PI** - Leadership of aerosol investigations in support of the Science Impact Team (SIT) for the Aerosols and Cloud-Convection-Precipitation Designated Observables study. NASA. Project period: 2020-2022. \$236K. 0.5 month/year.
6. **Co-I** - The imitation game: construction of a habitable exoplanet detection machine. NASA. Project period: 2019-2022. \$753K. 0.25 month/year.
7. **Co-I** - Multi-Angle Imager for Aerosols (Earth Venture Instrument-3, MAIA) - Associating airborne particle types with adverse health outcomes using MAIA. NASA. Project period: 2016-2025. \$94,033K. 0.5 month/year.

PAST:

1. **PI** - Unified treatment of spatial heterogeneity and gaseous absorption in a generalized radiative transfer theory for atmospheric remote sensing. NASA. Project period: 2015-2019. \$455K. 3 months/year.
2. **PI** - Markov Chain modeling of atmospheric radiation for two-dimensional surface reflection pattern and application to Titan. NASA. Project period: 2010-2011. \$110K. 12 months/year.
3. **PI** - Shaped beam scattering by an inhomogeneous spheroid and optical force prediction. Alexander von Humboldt Foundation (Germany). Project period: 2008-2009. €50K. 12 months/year.
4. **Co-I** - Quantifying the relative impact of changes in aerosols and clouds on surface temperature trends in the Southeast US. NASA. Project period: 2014-2016, \$654K. 3 months/year.
5. **Co-I** - Evaluation of UV atmospheric correction in the presence of absorbing aerosols, and quantification of enhancements provided by multiangle, polarimetric and Oxygen A-band observations. NASA. Project period: 2014-2017. \$392K. 3 months/year.
6. **Co-I** - Titan retrievals: decoupling haze and surface. NASA. Project period: 2013-2017. \$356K. 3 months/year.
7. **Co-PI** - Development of Debye series for light scattering by a spheroid, German Research Council (Germany). Project period: 2009-2010. €110K. 12 months/year.

EXTERNAL SERVICE:

Science Team Membership

2016 – Present NASA Earth Venture Instrument - Multi-Angle Imager for Aerosols

2021 – Present NASA Atmosphere Observing Systems (AOS), Algorithm Working Group

2014 – 2020 NASA PACE Science Team

2019 – 2021 NASA Aerosols and Clouds, Convection and Precipitation (ACCP) Decadal Survey Study, Algorithm Working Group

Professional Award Committee Membership

2022 – Present Elsevier’s Richard M. Goody Award and Peter C. Waterman Award

2022 – Present François Arago Award for *Polarimetric Remote Sensing*

Guest Editor/Co-Editor

2020 *Guest Editor*, Special issue “Remote Sensing of Aerosols and Cloud Properties over Ocean” for journal *Remote Sensing*

2020 *Guest Co-Editor*, Special issue “Advances of Remote Sensing Inversion” for journal *Remote Sensing*

2022 *Guest Co-Editor*, Special issue “Advances of Remote Sensing Inversion” for journal *Frontiers in Remote Sensing*

2022 *Guest Co-Editor*, Special issue “Clouds, Circulation and Climate Sensitivity Supported by Remote Sensing” for journal *Remote Sensing*

2022 *Guest Co-Editor*, Special issue “Clouds - Aerosol - Radiation - Precipitation Interaction: Progress and Challenges” for journal *Advances in Atmospheric Sciences*

2019 – Present *Panelist/Proposal Reviewer* for National Science Foundation (NSF) ESP program, NASA ROSES ACCDAM, CCST, RST, SCIS, SSW, and CDAP programs, National Research Agency of France (ANR), Netherlands Organization for Scientific Research (NWO)

2007 – Present *Peer Reviewer* for journals: Nature / Nature Communication / Geophys. Res. Lett. / J. Geophys. Res. / Atmos. Meas. Tech. / Remote Sens. Environ. / J. Atmos. Sci. / Quar. J. Royal Met. Soc. / J. Quant. Spectro. & Radiative Trans. / Adv. Atmos. Sci. / IEEE Trans. Ant. Prop. / Opt. Lett. / Opt. Express / Appl. Opt. / J. Opt. Soc. Am. A / J. Opt. Soc. Am. B / J. Appl. Opt. / Experiments in Fluids / J. Electromagn Waves / Particuology / Int. J. Infrared and Millimeter Waves

Conference and Session Organization, Convening and Chairing

2023 Session co-convenor and chair, AGU Fall Meeting, Session “Advances of Atmospheric Remote Sensing Inversion”, San Francisco, USA

2023 Session organizer, The 2023 International Geoscience and Remote Sensing Symposium (IGARSS) – Session “Advanced Characterization of Biomass Burning Smoke and Mineral Dust Aerosols”, Pasadena, CA, USA, 2023.

2022 Member of Scientific committee, The 2022 workshop on “Advancements in remote sensing and modeling of aerosol, clouds and surface”, Lille, France

2022 Member of conveners committee, The 3rd International Conference on Advancement of Polarimetric Observations, Washington, DC, USA

2022 Session convener, The 16th AMS Conference on Atmospheric Radiation, Session “Atmospheric Radiative Transfer and Light Scattering Theory” - Madison, Wisconsin, USA

2021 Session co-convenor and chair, AGU Fall Meeting, Session “Advances of Atmospheric Remote Sensing Inversion”, San Francisco, USA

- 2020 Session co-convenor and chair, AGU Fall Meeting, Session “Advances of Atmospheric Remote Sensing Inversion”, San Francisco, USA
- 2019 Session co-convenor and chair, AGU Fall Meeting, Session “Advances of Atmospheric Remote Sensing Inversion”, San Francisco, USA
- 2019 Session chair, The 18th Electromagnetic and Light Scattering Conference, Hangzhou, China
- 2018 Session co-convenor and chair, The 2018 Annual Conference of Asia Oceania Geosciences Society (AOGS), Hawaii, USA
- 2017 Session chair, International Workshop on Advancement of Polarimetric Observations, Hefei, China
- 2012, 2014, 2018, 2020 Advisory committee member and Session chair, The International Conference on Laser Interaction with Particles, Rouen, France
- 2011 The 7th International Symposium on Measurement Techniques for Multiphase Flows, Tianjin, China

INTERNAL SERVICE:

- 2022 – Present Chair, Graduate Admissions Committee
School of Meteorology, University of Oklahoma
- 2020 – Present Member, College Academic Program Committee
College of Atmospheric and Geographic Sciences, University of Oklahoma
- 2019 – 2022 Member, Graduate Admissions Committee
School of Meteorology, University of Oklahoma
- 2021 – 2022 Member, Search Committee of Williams Chair
School of Meteorology, University of Oklahoma
- 2019 – 2021 Participant, Strategic planning for the time period 2021-2030 for School of Meteorology,
School of Meteorology, University of Oklahoma

PROFESSIONAL MEMBERSHIPS

- American Geophysical Union
- American Meteorological Society

MENTORED/CO-MENTORED STUDENTS

Postdocs:

- Lan Gao (2019 – 2020): School of Meteorology, The University of Oklahoma (Co-advised with Prof. Jens Redemann)
- Myungje Choi (2019): Jet Propulsion Laboratory, California Institute of Technology (Co-advised with Dr. Dejian Fu and Dr. David J. Diner)
- Zhaocheng Zeng (2017 – 2018): California Institute of Technology (Co-advised with Prof. Yuk Yung and Dr. Vijay Natraj)

Graduate Students:

- Taozhong Huang (PhD student, 2021 – Present): School of Meteorology, University of Oklahoma
- Benting Chen (MS student, 2021 – Present): School of Meteorology, University of Oklahoma
- Elizabeth Spicer (MS student, 2022 – Present): School of Meteorology, University of Oklahoma
- David P. Nowicki (MS student, 2019 – 2021): School of Meteorology, University of Oklahoma
- Taozhong Huang (MS student, 2019 – 2021): School of Electrical & Computer Engineering, University of Oklahoma
- Haitao Yu (PhD student, 2009 – 2010): Technical University of Darmstadt, Germany (Co-advised with Prof. Cameron Tropea)
- Christine Bradley (PhD student, summer of 2014 and 2015): University of Arizona, USA (Co-advised with Dr. David J. Diner and Prof. Russell Chipman)

Undergraduate students

- Lernik Asserian (summer of 2014 and 2015): Undergraduate student, Glendale Community College, USA (Co-advised with Anthony Davis)
- Hiday Camryn, Jonathan Hudson, Bernard Hughes, Bruce Pollock, Ileana Raye, Preston Ford, Charles Finley, Ayman Elyoussoufi, Maria Wanzek, James Glover: School of Meteorology, The University of Oklahoma (2020 – 2021).
- Brayden A. Barton, Justin T. Castleberry, Cameron C. Clark, Peyton N. Galyean, Jacob C. Giard, Hayden W. Giller, Reagan A. Rasmussen, Kyle P. Kigar, Steven Z. Shores; Colton D. Williams (2021 – Present)

MASTERS AND DOCTORAL COMMITTEE MEMBERSHIP

Ph.D thesis:

Taozhong Huang (2022 – Present, Chair), School of Meteorology, University of Oklahoma

Emily D. Lenhardt (2022 – Present), School of Meteorology, University of Oklahoma

Junho Ho (2022 – Present), School of Meteorology, University of Oklahoma

Thiel C. Kevin (2022 – Present), School of Meteorology, University of Oklahoma

Saurabh Patil (2022 – Present), School of Meteorology, University of Oklahoma

Qingyu Wang (2020 – Present), School of Meteorology, University of Oklahoma

Brett S. Bonine (2020-2021), Department of Physics and Astronomy, University of Oklahoma

Jesse R. Loveridge (2021 – 2023), Department of Atmospheric Sciences, University of Illinois at Urbana-Champaign

MS thesis:

Elizabeth Spicer (2021 – Present, Chair): School of Meteorology, University of Oklahoma

Logan M. Roy (2021 – Present), School of Meteorology, University of Oklahoma

Bradley F. Lamkin (2022 – Present), School of Meteorology, University of Oklahoma

Jeffrey S. Lee (2023 – Present), School of Meteorology, University of Oklahoma

Nathan T. Lis (2020), School of Meteorology, University of Oklahoma

Emily D. Lenhardt (2020 – 2021), School of Meteorology, University of Oklahoma

Logan T. Mitchell (2021 – 2022), School of Meteorology, University of Oklahoma

Junho Ho (2021 – 2022), School of Meteorology, University of Oklahoma

Jiafen Hu (2020 – 2021), School of Meteorology, University of Oklahoma

Benting Chen (2022 – Present, Chair), School of Meteorology, University of Oklahoma

David Nowicki (2020 – 2021, Chair), School of Meteorology, University of Oklahoma

Taozhong Huang (2020 – 2021, Chair), School of Electrical & Computer Engineering, University of Oklahoma

TEACHING COURSES

- METR 5223: Atmospheric Radiation
- METR 3323/METR 5313: Statistical Meteorology

PUBLICATIONS

Published or accepted for publication:

2023

1. E.D. Lenhardt, L. Gao, J Redemann, **F. Xu**, S.P Burton, B. Cairns, et al. Use of lidar aerosol extinction and backscatter coefficients to estimate cloud condensation nuclei (CCN) concentrations in the southeast Atlantic. *Atmospheric Measurement Techniques* 16, 2037-2054, 2023.
2. J. Ho, G. Zhang, P. Bukovcic, D.B. Parsons, **F. Xu**, J. Gao , et al. Improving Polarimetric Radar-based Drop Size Distribution Retrieval and Rain Estimation using Deep Neural Network, <https://doi.org/10.1175/JHM-D-22-0166.1>, 2023

2022

3. S. Gupta, G.M. McFarquhar, J.R. O'Brien, M.R. Poellot, D. J. Delene, I.Y. Chang, L. Gao, **F. Xu**, and J. Redemann. In situ and satellite-based estimates of cloud properties and aerosol-cloud interactions over the Southeast Atlantic Ocean. *Atmos. Chem. Phys.*, 22, 12923–12943, 2022.

2021

4. **F. Xu**, L. Gao, J. Redemann, F. Connor, W.R. Espinosa, A. Da Silva, S. Stamnes, S. P Burton, X. Liu, R. Ferrare, B. Cairns and O. Dubovik, A combined lidar-polarimeter inversion approach for aerosol remote sensing over ocean. *Front. Remote Sens.*, 2, 620871, 2021.
5. **F. Xu** and D.J. Diner. Retrieval of water vapor abundance using AirMSPI. *J. Quant. Spectrosc. Radiat. Transfer.* 267, 107610, 2021.
6. T. Huang*, **F. Xu**, L. Gao, C. Flynn and O. Dubovik, A correlation-based inversion method for aerosol property retrieval from AERONET measurements. *J. Quant. Spectrosc. Radiat. Transfer.* 272, 107808, 2021 (*: student author).
7. Z. Zeng, V. Natraj, **F. Xu**, S. Chen, F-Y Gong, T. Pongetti, K. Sung, G. Toon, S. Sander, and Y. Yung, GFIT3: A full physics retrieval algorithm for remote sensing of greenhouse gases in the presence of aerosols. *Atmos. Meas. Tech.*, 14, 6383-6507, 2021.
8. O. Dubovik, G. Schuster, **F. Xu**, Y. Hu, H. Bösch and J. Landgraf, Grand challenges in satellite remote sensing. *Front. Remote Sens.*, 2, 619818, 2021.
9. O. Dubovik, D. Fuertes, P. Litvinov, A. Lopatin, T. Lapyonok, I. Dubovik, **F. Xu**, F. Ducos, C. Chen, B. Torres, Y. Derimian, L. Li, M. Herreras-Giralda, M. Herrera, Y. Karol, C. Matar, G.L. Schuster, R. Espinosa, A. Puthukkudy, Z. Li, J. Fischer, R. Preusker, J. Cuesta, A. Kreuter, A. Cede, M. Aspetsberger, D. Marth, L. Bindreiter, A. Hangler, V. Lanzinger, C. Holter and C. Federspiel, Multi-term LSM for applying multiple a priori constraints in problems of atmospheric remote sensing: GRASP algorithm - concept and applications. *Front. Remote Sens.*, 2, 706851, 2021.

2020

10. Z. Zeng, **F. Xu**, V. Natraj, T. J. Pongetti, R-L Shia, Q. Zhang, S. P. Sander and Y. L. Yung, Remote sensing of angular scattering effect of aerosols in a North America megacity. *Remote Sens. Environ.*, 242, 111760, 2020.
11. Y. Wang, H. Su, J. Jiang, **F. Xu**, and Y. Yung. Impact of cloud ice particle size uncertainty in a climate model and implications for future satellite missions. *J. Geophys. Res. Atmos.* 125, 6, 2020.
12. J. Chowdhary, P. Zhai, **F. Xu**, R. Frouin, and D. Ramon, Testbed results for scalar and vector radiative transfer computations of light in atmosphere-ocean systems. *J. Quant. Spectrosc. Radiat. Transfer*, 242, 106717, 2020.
13. Z. Zeng, S. Chen, V. Natraj, T. Le, **F. Xu**, A. Merrelli, D. Crisp, S. Sander; Y. L. Yung, Constraining the vertical distribution of coastal dust aerosol using OCO-2 O₂ A-band measurements. *Remote Sens. Environ.* 236, 111494, 2020.
14. G. Fu, O. Hasekamp, J. Rietjens, M. Smit, A. di Noia, B. Cairns, A. Wasilewski, D. Diner, **F. Xu**, V. Martins, K. Knobelspiesse, S. Burton, C. Hostetler, J. Hair, R. Ferrare, and A. da Silva, Aerosol retrievals from different polarimeters during the ACEPOL campaign using a common retrieval algorithm. *Atmos. Meas. Tech.*, 13, 553-573, 2020.
15. K. Knobelspiesse, H.M.J. Barbosa, C. Bradley, C. Bruegge, B. Cairns, G. Chen, J. Chowdhary, A. Cook, A. Di Noia, B. van Diedenhoven, D. J. Diner, R. Ferrare, G. Fu, M. Gao, M. Garay, J. Hair, D. Harper, G. van Harten, O. Hasekamp, M. Helmlinger, C. Hostetler, O. Kalashnikova, A. Kupchock, K. Longo De Freitas, H. Maring, J.V. Martins, B. McBride, M. McGill, K. Norlin, A. Puthukkudy, B. Rheingans, J. Rietjens, F.C. Seidel, A. da Silva, M. Smit, S. Stamnes, Q. Tan, S. Val, A. Wasilewski, **F. Xu**, X. Xu, and J. Yorks, The Aerosol Characterization from polarimeter and lidar (ACEPOL) airborne field campaign. *Earth Syst. Sci. Data*, 12, 2183-2208, 2020.

2019

16. Bradley C.L., D. J. Diner, **F. Xu**, R. M. Kupinski, and A. Chipman. Spectral invariance hypothesis study of polarized reflectance with ground-based Multiangle SpectroPolarimetric Imager (GroundMSPI). *IEEE Trans. Geos. Remote Sensing*, 57, 10, 8191-8207, 2019.
17. Pistone, K., J. Redemann, S. Doherty, P. Zuidema, S. Burton, B. Cairns, S. Cochrane, R. Ferrare, C. Flynn, S. Freitag, S.G. Howell, M. Kacenelenbogen, S. LeBlanc, X. Liu, K.S. Schmidt, A.J. Sedlacek III, M. Segal-Rozenhaimer, Y. Shinozuka, S. Stammes, B. van Diedenhoven, G. van Harten, and **F. Xu**. Intercomparison of biomass burning aerosol optical properties from in situ and remote-sensing instruments in ORACLES-2016. *Atmos. Chem. Phys.* 19, 9181-9208, 2019.
18. Remer, L.A., A.B. Davis, S. Mattoo, R. C. Levy, O. Kalashnikova, J. Chowdhary, K. Knobelspiesse, Z. Ahmad, E. Boss, B. Cairns, O. Coddington, H.M. Dierssen, D.J. Diner, B. Franz, R. Frouin, B-C Gao, A. Ibrahim, J.V. Martins, A.H. Omar, O. Torres, S.E. Platnick, **F. Xu**, and P. Zhai. Retrieving aerosol characteristics from the PACE mission, Part 1: Ocean Color Instrument. *Front. Earth Sci.* 7, 152, 2019.
19. Remer, L.A., K. Knobelspiesse, P-W Zhai, **F. Xu**, O. Kalashnikova, J. Chowdhary, O. Hasekamp, O. Dubovik, L. Wu, Z. Ahmad, E. Boss, B. Cairns, O. Coddington, A. B. Davis, H.M. Dierssen, D.J. Diner, B. Franz, R. Frouin, B-C Gao, A. Ibrahim, R.C. Levy, J.V. Martins, A.H. Omar, S.E. Platnick, and O. Torres. Retrieving aerosol characteristics from the PACE mission, Part 2: Multi-angle and polarimetry. *Front. Earth Sci.* 7, 94, 2019
20. J. Chowdhary, P. Zhai, E. Boss, H.M. Dierssen, R.J. Frouin, A.I Ibrahim, Z. Lee, L.A. Remer, M. Twardowski, **F. Xu**, X. Zhang, M. Ottaviani, W.R. Espinosa, D. Ramon. Modeling atmosphere-ocean radiative transfer: A PACE mission perspective. *Front. Earth Sci.* 7, 100, 2019.
21. **F. Xu**, O. Dubovik, D.J. Diner, and Y. Schechner. A correlated multi-pixel inversion approach for aerosol remote sensing. *Remote Sensing*, 11, 746, 2019.
22. M. Kupinski, D.J. Diner, C. Bradley, R. Chipman, and **F. Xu**. Angle of linear polarization images of outdoor scenes. *Opt. Eng.*, 58, 082419, 2019.
23. M. Kupinski, C. Bradley, D. Diner, **F. Xu**, and R. Chipman. Estimating surface orientation from microfacet BRDM models in outdoor passive imaging polarimetry. *Opt. Eng.*, 58, 082416. 2019
24. Yu, H. J. Shen, C. Tropea, and **F. Xu**. Model for computing optical caustics for the primary rainbow from tilted spheroidal drops. *Opt. Lett.*, 44, 823-826, 2019.

2018

25. L. Bi, **F. Xu**, and Gérard Gouesbet. Depolarization of nearly spherical particles: the Debye series approach. *Phys. Rev. A*, 98, 053809, 2018.
26. **F. Xu**, G. van Harten, D. J. Diner., A. B. Davis, F. Seidel, B. Rheingans, M. Toska, M. Alexandrov, B. Cairns, R. Ferrare, S. Burton, M. Fenn, C. Hostetler, R. Wood, and J. Redemann. Coupled retrieval of cloud and aerosol above cloud properties using AirMSPI. *J. Geophys. Res. Atmos.*, 123, 3175-3204, 2018
27. Z. Zeng, V. Natraj, **F. Xu**, T. J. Pongetti, R-L. Shia, E.A. Kort, G. C., Toon, S. P. Sander, Y. L. Yung. Constraining aerosol vertical profile in the boundary layer using hyperspectral measurements of Oxygen Absorption. *Geophys. Res. Lett.* 45, 10772-10780, 2018.

28. D. J. Diner, M. Brauer, C. Bruegge, K. A. Burke, R. Chipman, L. Di Girolamo, M. J. Garay, S. Hasheminassab, E. Hyer, M. Jerrett, V. Jovanovic, O. V. Kalashnikova, Y. Liu, A. I. Lyapustin, R. V. Martin, A. Nastan, B. D. Ostro, B. Ritz, J. Schwartz, J. Wang, and **F. Xu**. Advances in multiangle satellite remote sensing of speciated airborne particulate matter and association with adverse health effects: from MISR to MAIA. *J. Appl. Remote Sens.*, 12, 042603, 2018.
29. J. H. Jiang, A. J. Zhai, J. Herman, C. Zhai, R. Hu, H. Su, V. Natraj, J. Li, **F. Xu**, Y.L. Yung. Using deep space climate observatory measurements to study the Earth as an exoplanet. *Astrophys. J.* 156:26, 2018.
30. O. V. Kalashnikova, M. J. Garay, K. H. Bates, C. M. Kensch, W. Kong, C. D. Cappa, A.I. Lyapustin, H.H. Jonsson, F.C. Seidel, **F. Xu**, D.J. Diner, and J.H. Seinfeld. Photopolarimetric sensitivity to blackcarbon content of wildfire smoke: Results from the 2016 ImPACT-PM field campaign. *J. Geophys. Res. Atmos.*, 123, 5376-5396, 2018.
31. M. Gao, P-W. Zhai, B. Franz, Y. Hu, K. Knobelspiesse, P. J. Werdell, A. Ibrahim, and **F. Xu**. Retrieval of aerosol properties and water leaving reflectance from multi-angular polarimetric measurements over coastal waters. *Opt. Express*, 26, 8968-8989, 2018.
32. A. B. Davis, **F. Xu**, and D. J. Diner. Addendum to ‘Generalized radiative transfer theory for scattering by particles in an absorbing gas: addressing both spatial and spectral integration in multi-angle remote sensing of optically thin aerosol Layers’. *J. Quant. Spectrosc. Radiat. Transfer.* 205, 251-253, 2018.
33. A. B. Davis, **F. Xu**, and D. J. Diner. Generalized radiative transfer theory for scattering by particles in an absorbing gas: addressing both spatial and spectral integration in multi-angle remote sensing of optically thin aerosol layers. *J. Quant. Spectrosc. Radiat. Transfer.* 205, 148-162, 2018.
34. M. L. Witek, D. J. Diner, M. J. Garay, **F. Xu**, M. A. Bull, and F. C. Seidel. Improving MISR AOD retrievals with low light-level corrections for veiling light. *IEEE Trans. Geosci. Remote Sens.*, 56, 1251-1268, 2018.

2017

35. **F. Xu**, G. van Harten, D. J. Diner, O. V. Kalashnikova, F. C. Seidel, C. J. Bruegge, and O. Dubovik. Coupled retrieval of aerosol properties and land surface reflection using the Airborne Multiangle SpectroPolarimetric Imager. *J. Geophys. Res. Atmos.*, 122, 7004-7026, 2017.

2016

36. **F. Xu**, O. Dubovik, P.-W. Zhai, D. J. Diner, O. V. Kalashnikova, F. C. Seidel, P. Litvinov, A. Bovchaliuk, M. J. Garay, G. van Harten, and A. B. Davis. Joint retrieval of aerosol and water-leaving radiance from multi-spectral, multi-angular and polarimetric measurements over ocean. *Atmos. Meas. Tech.* 9, 2877-2907, 2016.
37. **F. Xu**, A. B. Davis, and D. J. Diner. Markov chain formalism for generalized radiative transfer in a plane-parallel medium, accounting for Polarization. *J. Quant. Spectrosc. Radiat. Transfer.* 184, 14-26, 2016.

2015

38. A. A. Kokhanovsky, A. B. Davis, B. Cairns, O. Dubovik, O. P. Hasekamp, I. Sano, S. Mukai, V. V. Rozanov, P. Litvinov, T. Lapyonok, I. S. Kolomiets, Y. A. Oberemok, S. Savenkov, W. Martin, A. Wasilewski, A. Di Noia, F. A. Stap, J. Rietjens, **F. Xu**, V. Natraj, M. Duan, T. Cheng, R. Munro.

Space-based remote sensing of atmospheric aerosols: The multi-angle spectro-polarimetric frontier. *Earth-Sci. Rev.* 145, 2015.

2014

39. A. B. Davis and **F. Xu**. A generalized linear transport model for spatially correlated stochastic media. *J. Comput. & Theoretical Transport*, 43, 474-514, 2014.

2013

40. H. Yu, **F. Xu**, C. Tropea. Optical caustics associated with the primary rainbow of oblate droplets: simulation and application in non-sphericity measurement. *Opt. Express* 21, 25761-25771, 2013.
41. H. Yu, **F. Xu**, C. Tropea. Simulation of optical caustics associated with the secondary rainbow of oblate droplets. *Opt. Lett.* 38, 4469-4472, 2013.
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