

XI CHEN

Assistant research scientist

Center for Global and Regional Environmental Research & Dept. of Chemical and Biochemical Engineering, University of Iowa
248 ERF, 330 S Madison St, Iowa City, IA 52240

Phone: 1 (319)259-2571; Email: xi-chen-4@uiowa.edu

Group website: <http://arroma.uiowa.edu>

EDUCATION

- Ph.D. Atmospheric physics and environment, University of Chinese Academy of Sciences, China, 2017
- B.S. Atmospheric Science, Nanjing University, China, 2012

PROFESSIONAL/WORK EXPERIENCE

- 09/2022-present Assistant research scientist, Dept. of Chemical and Biochemical Engineering, University of Iowa, U.S.
- 02/2019-08/2022 Postdoctoral research scholar, Dept. of Chemical and Biochemical Engineering, University of Iowa, U.S.
- 03/2018-06/2018 Visiting scholar, Dept. of Chemical and Biochemical Engineering, University of Iowa, U.S.
- 06/2017-01/2019 Postdoctoral research scholar, Institute of Atmospheric Physics, Chinese Academy of Sciences, China
- 10/2015-09/2016 Visiting student in University of Nebraska-Lincoln, U.S.

RESEARCH INTERESTS AND APPROACHES

Interests Xi Chen's research focused on the atmospheric aerosols influence on surface atmospheric environment and climate change by combining remote sensing, chemical transport model and machine learning techniques. My experiences include radiative transfer model development, aerosol retrieval algorithm development from satellite observations, aerosols scattering influence in carbon dioxide retrieval, aerosols influence on surface particulate matter pollution and public health, stratospheric aerosols radiative forcing and its impact on ozone depletion and climate change, as well as the application of machine learning (ML) methods in atmospheric science/remote sensing field.

- Approaches/Methods**
- Radiative transfer theory and model development.
 - Aerosol scattering calculation and modelling
 - Optimal estimation theory and retrieval algorithm development
 - Remote sensing data processing from different platforms (ground-based passive sensors, spaceborne lidar, satellite passive sensors, airborne sensors)
 - Satellite data application in air quality estimates/forecast
 - Neural network and other machine learning/artificial intelligence models
 - Global atmospheric chemical transport model (GEOS-Chem).

HONORS AND AWARDS

2025 Staff Excellence Award for Research in College of Engineering, University of Iowa

2024 Elsevier/JQSRT **Richard M. Goody Young Scientist Award** on Atmospheric Radiation and Remote Sensing
 2017 Best Doctoral Dissertation at the Institute of Atmospheric Physics, Chinese Academy of Sciences
 2016 Best Paper Award at the Advanced Training Course in Atmospheric Remote Sensing under ESA-MOST Dragon 4 Cooperation
 2015 Best Poster Award at ESA-MOST Dragon 3 symposium

RESEARCH GRANTS

Funded:

- 2025-2029: **Principal Investigator**, “Support Air Quality and Public Health Management in Wildfires: Satellite and Machine Learning Based Air Quality Forecast”, **NASA** Health and Air Quality Applied Sciences Team (HAQAST) program, \$ 591,616.
- 2026-2027: **Principal Investigator**, Participation of Tiger Team of **NASA** Health and Air Quality Applied Sciences Team (HAQAST) program, \$ 239,445.
- 2025-2028: **Co-Investigator**, “TEMPO-ABI synergy: Enhanced Applications in Aerosols and Clouds Research on Layer Heights and Optical Properties”, **NASA** TEMPO/ACX Science and Applications Team program, PI: Jun Wang (U. Iowa), \$ 225,000.
- 2024-2027: **Co-Investigator**, “Enhance and Enrich SAGE III Aerosol Data Products”, **NASA** SAGEIII/ISS programs, PI: Jun Wang (U. Iowa), \$514,816.

Participated as Postdoc/Research Scientist:

- 2023-2023: “GeoXO ACX Study Phase Support”, **NASA-NOAA** GeoXO program, Institutional PI: Jun Wang (U. Iowa)
- 2022-2024: “Enrich and enhance the application of TEMPO and GEOS data products for regional air quality and public health management under smoke conditions”, **NASA** Health and Air Quality (HAQ) program, PI: Jun Wang (U. Iowa).
- 2022-2025: “EPIC Hourly Aerosol Optical Centroid Height (AOCH) product: mapping the diurnal variation of smoke and dust vertical distributions for air quality and climate studies”, **NASA** DSCOVR science team, PI: Jun Wang (U. Iowa).
- 2021-2024: “Sources and radiative forcing of upper tropospheric and lower stratospheric aerosols: an integrated analysis of the effects of pyrocumulonimbus events”, **NASA** SAGEIII/ISS program, PI: Jun Wang (U. Iowa).
- 2021-2022: “NOAA GEO-XO ACX Instrument Valuation Study: Aerosol Layer Height Retrieval for Surface PM_{2.5} Monitoring”, funded by **NOAA Office of Atmospheric Research**, PI: Jun Wang (U. Iowa).
- 2020-2023: “Retrieval of Aerosol Vertical Distributions with Measurements from O₂ A/B Bands and Polarimetric Data from Blue Bands: Algorithm Development and Synergistic Analysis”, **NASA** Remote Sensing Theory for Earth Science, PI: Dr. Xiaoguang Xu (UMBC).
- 2020-2022, “Intercomparison and validation of GEMS L2 aerosol effective height with measurements from TROPOMI, EPIC/DSCOVR and field campaign”, the 1st **GEMS Validation Team (VT)** for monitoring and improving of the accuracy of GEMS products, PI: Jun Wang (U. Iowa).
- 2016-2028, “Multi-Angle Imager for Aerosols”, **NASA** EVI program, PI: David Diner (NASA JPL); Intitutional PI: Jun Wang (U. Iowa)

- 2016-2024, “Tropospheric Emissions: Monitoring of Pollution (TEMPO)” satellite mission funded by NASA, PI: Kelly Chance (Harvard-Smithsonian); Intuitional PI: Jun Wang (U. Iowa).

SELECTED PRESENTATIONS/MEETINGS

1. Xi Chen, Jun Wang, James Carr, Inderjeet Singh and Zhendong Lu, TEMPO Aerosol Optical Centroid Height (AOCH) Algorithm and Synergy with ABI/GOES-R, *TEMPO DART team meeting*, Iowa City, IA, 15-18 June 2026.
2. Xi Chen, Huanxin Zhang, Meng Zhou, Lorena Castro García, Megan Christiansen and Jun Wang, Support PM_{2.5} Exceptional Events Demonstration in Smoke and Dust Plumes using Aerosol Optical Centroid Height (AOCH) Observations, *HAQAST public meeting*, Madison, WI, 13-14 May 2026.
3. Xi Chen, Jun Wang, Yeonsu Park, Meng Zhou, Huanxin Zhang, Megan Christiansen, Lorena Castro García, Support PM_{2.5} air quality and public health management in wildfires by satellite observations and machine learning techniques, GH12A-06, *AGU 2025 annual meeting*, New Orleans, 15-19 December 2025.
4. Xi Chen, Jun Wang, Jim Carr and Xiong Liu, Hourly smoke AOCCH retrievals from geostationary satellites in contiguous United States: synergy of TEMPO and ABI/GOES-R, A51Q-0963, *AGU 2025 annual meeting*, New Orleans, 15-19 December 2025.
5. Xi Chen, Huanxin Zhang, Meng Zhou, Yeonsu Park, Lorena Castro García, Megan Christiansen and Jun Wang, Support Air Quality and Public Health Management in Wildfires: Satellite and Machine Learning Based PM_{2.5} Forecast, *HAQAST public meeting*, St. Louis, MO, 6-7 November 2025.
6. Xi Chen, Jun Wang, Travis N. Knepp and Robbie Manion, Enrich SAGE III/ISS Aerosol Product from Lunar measurements, *SAGE III/ISS annual science meeting*, Hampton, 13-14 August 2025.
7. Xi Chen, Jun Wang, Jim Carr, Meng Zhou, Xiong Liu, Aerosol optical centroid height retrieval from hyperspectral measurements in oxygen absorption bands: perspectives from polar orbiting satellite to geostationary satellite constellation, *ELS XXI conference*, Milazzo, Italy, 23-27 June 2025.
8. Xi Chen, Jun Wang, Joe Gomes, Oleg Dubovik, Ping Yang, and Masanori Saito, Analytical Prediction of Scattering Properties of Spheroidal Dust Particles With Machine Learning, *ELS XXI conference*, Milazzo, Italy, 23-27 June 2025.
9. Xi Chen, Jun Wang, Meng Zhou, Jim Carr, Hourly smoke AOCCH retrievals from geostationary satellites in contiguous United States: synergy of TEMPO and GOES-R, *AMS 2025 annual meeting*, New Orleans, 12-16 January 2025.
10. Xi Chen, Jun Wang, Meng Zhou, Dust Optical Centroid height (AOCH) over bright surface, *AMS 2025 annual meeting*, New Orleans, 12-16 January 2025.
11. Xi Chen, Jun Wang, David Peterson, Yaowei Li, Weizhi Deng, Coating Effect of PyroCb Smoke on Stratospheric Ozone and Radiative Forcing: a Study of 2019-2020 Australian Megafire, *AGU 2024 fall meeting*, Washington DC, 9-13 December 2024.
12. Xi Chen, Jun Wang, Travis N. Knepp, Robbie Manion, Enrich SAGE III/ISS Aerosol Product: Aerosol microphysical properties and lunar measurements, *SAGE III/ISS annual science meeting*, virtual, 22-23 October 2024.

13. Xi Chen, Jun Wang, Meng Zhou, Zhendong Lu, Lyatt Jaegle, Luke Oman, Ghassan Taha, Stratospheric Particle Size Growth and Cooling by Water Vapor After the 2022 Hunga Tonga Eruption, *AGU 2023 fall meeting*, San Francisco, 11-15 December 2023.
14. Xi Chen, Jun Wang, Meng Zhou, Zhendong Lu, Luke Oman, Lyatt Jaegle, Ghassan Taha, Stratospheric particle size growth and cooling by water vapor after the 2022 Hunga Tonga eruption, *SAGEIII/ISS annual science meeting*, Atlanta, 12-13 September 2023.
15. Xi Chen, Jun Wang, Zhendong Lu, Luke Oman, Lyatt Jaegle, Stratospheric Composition and Thermal Structure Changes Observed from Space After 2022 Hunga Tonga Eruption, *AMS 2023 annual meeting*, Denver, 8-12 January 2023.
16. Xi Chen, Jun Wang, David Peterson, Fangqun Yu, Kenneth Christian, Matthew DeLand, Nickolay Krotkov, Omar Torres, Stratospheric composition perturbations and radiative impact from 2019-2020 Australian pyroCb event, *AGU 2022 fall meeting*, Chicago, 12-16 December 2022.
17. Xi Chen, Jun Wang, David Peterson, Fangqun Yu, Kenneth Christian, Matthew DeLand, Nickolay Krotkov, Omar Torres, Impacts of Pyrocumulonimbus on atmospheric composition in UTLS, *SAGEIII/ISS annual science meeting*, Hampton, 13-14 October 2022.
18. Xi Chen, Jun Wang, Joe Gomes, Oleg Dubovik, Ping Yang, and Masanori Saito, Analytical prediction of scattering properties of spheroidal dust particles with machine learning (Poster), *the Third Advancement of POLarimetric Observations Conference (APOLO-2022)*, Washington D.C., 9-12 August 2022.
19. Jun Wang, Xi Chen, Xiaoguang Xu, David J. Diner, Passive remote sensing of aerosol layer height with oxygen absorption bands: can multi-angular polarimetric measurements help? (Invited), *the Third Advancement of POLarimetric Observations Conference (APOLO-2022)*, Washington D.C., 9-12 August 2022.
20. Xi Chen, Yi Liu, Dongxu Yang, Jun Wang, Zhaonan Cai, Liang Feng, A theoretical analysis for improving aerosol-induced CO₂ retrieval uncertainties over land based on TanSat nadir observations (Invited), *the Third Advancement of POLarimetric Observations Conference (APOLO-2022)*, Washington D.C., 9-12 August 2022.
21. Xi Chen et al., Absorbing aerosol layer height retrieval using TROPOMI Oxygen B band and its potential application in surface air quality estimation, *AMS Collective Madison Meeting*, Madison and online, 8-12 August 2022.
22. Xi Chen, Jun Wang, David Peterson, Fangqun Yu, Kenneth Christian, Matthew DeLand, Nickolay Krotkov, Omar Torres, The impact of Pyrocumulonimbus on atmospheric composition in UTLS, *GEOS-Chem IGC10 conference*, St. Louis, 7-10 June 2022.
23. Xi Chen, Jun Wang, Xiaoguang Xu, Meng Zhou, Huanxin Zhang, Lorena C. Garcia, Peter R. Colarco, Scott J. Janz, John Yorks, Matthew McGill, Jeffrey S. Reid, Martin de Graaf, Shobha Kondragun, First retrieval of absorbing aerosol height using TROPOMI O₂ B band: algorithm development and application for surface particulate matter estimates, *AGU 2021 fall meeting*, New Orleans, 13-17 December 2021.
24. Jun Wang, Xi Chen, Xiaoguang Xu, David J Diner, Can multi-angular polarimetric measurements in the oxygen-A and B bands improve the retrieval of aerosol vertical distribution? (Poster), *AGU 2021 fall meeting*, New Orleans, 13-17 December 2021.
25. Xi Chen, Jun Wang, Zhendong Lu, Hyerim Kim, Validation of GEMS aerosol effective height: comparison with different platforms from space (CALIOP, TROPOMI, EPIC/DSCOVR), *GEMS Validation Team mid-term meeting*, Virtual, 22-23 November 2021.

26. Xi Chen, Jun Wang, David Peterson, Fangqun Yu, Kenneth Christian, Matthew DeLand, Nickolay Krotkov, Omar Torres, Impacts of Pyrocumulonimbus on UTLS, *SAGEIII/ISS science team meeting*, Virtual, 5-6 November 2021.
27. Xi Chen, Jun Wang, Joe Gomes, Oleg Dubovik and Tatyana Lapyonok, Characterization of Nonspherical Dust Particles Properties Using Neural Network and Application in Linearization, *AMS 101st annual meeting*, Virtual, 10-15 January 2021.
28. Xi Chen, Jun Wang, Xiaoguang Xu, Meng Zhou, and Omar Torres, Aerosol Optical Central Height Retrieval from TROPOMI O₂ Absorption Bands and Potential Application in Surface Air Pollution, *AMS 101st annual meeting*, Virtual, 10-15 January 2021.

Other meetings attended: AGU Joint International Network in Geoscience meeting (AJM) 2018, International Workshop of Greenhouse Gases Measurements from Space (IWGGMS) in 2017, Asia Oceania Geosciences Society (AOGS) annual meeting in 2017

Poster presentations are noted, and others are oral presentations.

PROFESSIONAL ACTIVITIES AND SERVICES

Professional Memberships:

- American Geophysical Union (AGU) (2016-present)
- American Meteorological Society (AMS) (2020-present)

Review for Professional Journals:

As voluntary reviewer of various professional journals including *Advances in Atmospheric Sciences*, *Atmospheric Chemistry and Physics*, *Atmospheric Measurement Techniques*, *Frontiers in Remote Sensing*, *Geophysical Research Letters*, *Journal of Geophysical Research – Atmospheres*, *Remote Sensing of Environment*, *Remote Sensing* etc.

PUBLICATIONS

1. Deng, W., Wang, J., Zhou, M., **Chen, X.**, Wu, X., Zhang, H., Cohen, J.B., Wei, J., da Silva, A., Brasseur, G.P. and Granier, C., 2026. Fires reverse progress toward ozone air quality standards in the United States. *Science*, 392(6802), pp.1088-1092, [DOI: 10.1126/science.aed3197](https://doi.org/10.1126/science.aed3197).
2. **Chen, X.**, Wang, J., Peterson, D.A., Li, Y., Julstrom, W., Keutsch, F.N., & Dykema, J. (2026). Large particle size and thick coating influence pyrocumulonimbus smoke radiative forcing and stratospheric warming: Insights from the 2019–2020 Australian megafires. *Geophysical Research Letters*, 53, e2025GL119099. <https://doi.org/10.1029/2025GL119099>
3. Lu, Z., J. Wang, **X. Chen**, X. Xu, M. Zhou, D. Fu, J. H. Jiang, First retrieval of aerosol vertical profile with passive remote sensing: Part 1. Development of algorithm theoretical basis, *J. Geophys. Res. Atmos.*, 130(21), <https://doi.org/10.1029/2025JD044332>, 2025.
4. **X. Chen**, J. Wang, X. Xu and M. Zhou, Dust Aerosol Optical Centroid Height (AOCH) Over Bright Surface: First Retrieval From TROPOMI Oxygen A and B Absorption Bands, *IEEE Geoscience and Remote Sensing Letters*, 22, 1-5, doi: 10.1109/LGRS.2025.3601046, 2025.
5. **Chen, X.**, J. Wang, M. Zhou, Z. Lu, L. Jaegle, L. D. Oman, and G. Taha, Impact of water vapor on stratospheric temperature after the 2022 Hunga Tonga eruption: direct radiative cooling versus indirect warming by facilitating large particle formation, *npj Climate and Atmospheric Science*, 8(1), 192, doi:10.1038/s41612-025-01056-2, 2025.

6. Kim, H., **X. Chen**, J. Wang, Z. Lu, M. Zhou, G. R. Carmichael, S. S. Park, and J. Kim, Aerosol layer height (ALH) retrievals from oxygen absorption bands: intercomparison and validation among different satellite platforms, GEMS, EPIC, and TROPOMI, *Atmos. Meas. Tech.*, 18(2), 327-349, doi:10.5194/amt-18-327-2025, 2025.
7. Castro García, L., J. Wang, M. Christiansen, M. Zhou, **X. Chen**, K. E. Knowland, C. A. Keller, M. B. Follette-Cook, E. J. Hyer, Z. Adelman, M. Webster, S. A. Epstein, D. Welsh, and R. Biggerstaff, FireAQ: Monitoring Fire and Air Quality Forecasts, *EM Magazine*, December 2024, 22-28.
8. Chutia, L., J. Wang, H. Zhang, **X. Chen**, L. Castro Garcia, and N. Janecek, Elucidating the impacts of aerosol radiative effects for mitigating surface O₃ and PM_{2.5} in Delhi, India during crop residue burning period, *Atmospheric Environment*, 339, 120890, doi:10.1016/j.atmosenv.2024.120890, 2024.
9. Deng W., M. Zhou, J. Wang, Z. Xue, Z. Lu, **X. Chen**, H. Zhang, D. Peterson, E. Hyer, A Da Silva, Advancing FRP Retrieval: Bridging Theory and Application, *IEEE Transactions on Geoscience and Remote Sensing*, 62, 1-16, doi: 10.1109/TGRS.2024.3470538, 2024.
10. Zhou, M., J. Wang, **X. Chen**, Y. Wang, P. R. Colarco, R. C. Levy, and S. D. Miller, First lunar-light mapping of nighttime dust season oceanic aerosol optical depth over North Atlantic from space, *Remote Sensing of Environment*, 312, 114315, ISSN 0034-4257, 2024.
11. Lu, Z., Wang, J., Wang, Y., Henze, D. K., **Chen, X.**, Sha, T., and Sun, K.: Aggravated surface O₃ pollution primarily driven by meteorological variations in China during the 2020 COVID-19 pandemic lockdown period, *Atmos. Chem. Phys.*, 24, 7793–7813, <https://doi.org/10.5194/acp-24-7793-2024>, 2024.
12. Xu, X., **X. Chen**, J. Wang, L. A. Remer, Potential of NASA's Plankton, Aerosol, Cloud, and Ocean Ecosystem (PACE) Satellite Observations in the Oxygen Bands for Determining Aerosol Layer Height over Ocean, *Journal of Remote Sensing*, 4, 0167, <https://doi.org/10.34133/remotesensing.0167>, 2024.
13. Zhou, M., J. Wang, L. Castro Garcia, **X. Chen**, A. da Silva, Z. Wang, M. O. Roman, E. Hyer, and S. D. Miller, Enhancement of nighttime fire detection and combustion efficiency characterization using Suomi-NPP and NOAA20 VIIRS instruments, *IEEE Transactions on Geoscience and Remote Sensing*, doi: 10.1109/TGRS.2023.3261664, 2023.
14. Lu, Z., J. Wang, **X. Chen**, J. Zeng, Y. Wang, X. Xu, K. E. Christian, J. E. Yorks, E.P. Nowottnick, J.S. Reid, P. Xian, First mapping of monthly and diurnal climatology of Saharan dust layer height over the Atlantic Ocean from EPIC/DSCOVR in deep space, *Geophysical Research Letters*, 50, e2022GL102552, <https://doi.org/10.1029/2022GL102552>, 2023.
15. **Chen, X.**, Wang, J., Gomes, J., Dubovik, O., Yang, P., & Saito, M., Analytical prediction of scattering properties of spheroidal dust particles with machine learning, *Geophysical Research Letters*, 49, 2022, e2021GL097548.
16. **Chen, X.**, J. Wang, X. Xu, M. Zhou, H. Zhang, L. Castro Garcia, P. R. Colarco, S. J. Janz, J. Yorks, M. McGill, J. S. Reid, M. de Graaf, S. Kondragunta, First retrieval of absorbing aerosol height over dark target using TROPOMI oxygen B band: Algorithm development and application for surface particulate matter estimates, *Remote Sensing of Environment*, 265, 112674, 2021.
17. Lu, Z., J. Wang, X. Xu, **X. Chen**, S. Kondragunta, O. Torres, E.M. Wilcox, J. Zeng, Hourly Mapping of the Layer Height of Thick Smoke Plumes Over the Western U.S. in 2020 Severe Fire Season, *Frontiers in Remote Sensing*, 2, 766628, 2021.

18. **Chen, X.**, X. Xu, J. Wang, and D. J. Diner, Can multi-angular polarimetric measurements in the oxygen-A and B bands improve the retrieval of aerosol vertical distribution? *Journal of Quantitative Spectroscopy & Radiative Transfer*, 270, 2021.
19. Zhou, M., J. Wang, **X. Chen**, X. Xu, P. R. Colarco, S. D. Miller, J. S. Reid g, S. Kondraguntah, D. M. Gilese, and B. Holben, Nighttime smoke aerosol optical depth over U.S. rural areas: First retrieval, *Remote Sensing of Environment*, 267, 112717, 2021.
20. H. Boesch, Y. Liu, P. I. Palmer, J. Tamminen, J. S. Anand, Z. Cai, K. Che, H. Chen, **X. Chen**, L. Fend, J. Hakkarainen, P. Heikkinen, N. Kalaitzi, R. Kivi, R. Parker, P. Somkuti, J. Wang, A. Webb, D. Yang, L. Yao, Y. Yi. Monitoring Greenhouses Gases over China Using Space-Based Observations. *Journal of Geodesy and Geoinformation Science*, 2020, 3(4): 14-24.
21. Yang, D., Boesch, H., Liu, Y., Somkuti, P., Cai, Z., **Chen, X.**, et al. (2020). Toward high precision XCO₂ retrievals from TanSat observations: Retrieval improvement and validation against TCCON measurements. *Journal of Geophysical Research: Atmospheres*, 125, e2020JD032794. <https://doi.org/10.1029/2020JD032794>.
22. **Chen, X.**; Liu, Y.; Yang, D.; Cai, Z.; Chen, H.; Wang, M. A Theoretical Analysis for Improving Aerosol-Induced CO₂ Retrieval Uncertainties Over Land Based on TanSat Nadir Observations Under Clear Sky Conditions. *Remote Sens.* 2019, 11, 1061. <https://doi.org/10.3390/rs11091061>.
23. **Chen X**, Cai Z, Liu Y, Yang D. Monitoring air pollution in China from geostationary satellite: A synthetic study using simulated observations. *Science China Earth Sciences*, 2018, 61, <https://doi.org/10.1007/s11430-017-9252-4>
24. **Xi Chen**, Yi Liu, Dongxu Yang, Jinsong Zhou, Chongbin Guo, Yonghe Zhang & Zhaonan Cai. Exploration of the potential for using SPARK-I observations to derive atmospheric parameters. *International Journal of Remote Sensing*. 2018, 39:6, 1853-1870.
25. LIU, Y., WANG, J., YAO, L., **CHEN, X.**, CAI, Z., YANG, D., & LÜ, D. (2018). TanSat Mission Achievements: from Scientific Driving to Preliminary Observations. *Chin. J. Space Sci.*, 38(5).
26. Liu Yi, Wang Jing, Yao Lu, **Chen Xi**, Cai Zhaonan, Yang Dongxu, Yin Zengshan, Gu Songyan, Tian Longfei, Lu Naimeng, Lyu Daren. The TanSat mission: preliminary global observations. *Science Bulletin*, 2018, 63(18), 1200-1207.
27. Yang, D. X., Y. Liu, Z. N. Cai, **X. Chen**, L. Yao, and D. R. Lu: First global carbon dioxide maps produced from TanSat measurements. *Adv. Atmos. Sci.*, 2018, 35(6), 621–623, <https://doi.org/10.1007/s00376-018-7312-6>.
28. **Xi Chen**, Jun Wang, Yi Liu, Xiaoguang Xu, Zhaonan Cai, Dongxu Yang, Chang-Xiang Yan. Angular dependence of aerosol information content in CAPI/TanSat observation over land: effect of polarization and synergy with A-train satellites. *Remote Sensing of Environment*. 2017, 196, 163-177.
29. **Chen, X.**; Yang, D.; Cai, Z.; Liu, Y.; Spurr, R.J.D. Aerosol Retrieval Sensitivity and Error Analysis for the Cloud and Aerosol Polarimetric Imager on Board TanSat: The Effect of Multi-Angle Measurement. *Remote Sens.* 2017, 9, 183.
30. Dongxu Yang, Yi Liu, Zhaonan Cai, Jianbo Deng, Jing Wang, **Xi Chen**. An advanced carbon dioxide retrieval algorithm for satellite measurements and its application to GOSAT observations. *Chinese Science Bulletin*, 2015, 60(23):2063-2066.

31. **Chen Xi**, Liu Yi, Cai Zhaonan. Review of Radiative Transfer Model in Retrieval of Atmospheric CO₂ from Satellite Shortwave Infrared Measurements. *Remote Sensing Technology and Application*, 2015, 30(5): 825-834.