

# CURRICULUM VITAE

## NAME

Wei Gao

## ADDRESS

Department of Ecosystem Science and Sustainability  
Natural Resource Ecology Laboratory  
Colorado State University  
Fort Collins, CO 80523-1476

970-491-3609 office  
970-491-3601 fax  
[wei.gao@colostate.edu](mailto:wei.gao@colostate.edu)

## EDUCATION

- 1997 Ph.D., Applied Meteorology, Purdue University, West Lafayette, IN
- 1992 M.S., Micrometeorology and Modeling, Mississippi State University, Mississippi State, MS
- 1987 B.A., English, Anhui Normal University, Wuhu, China
- 1982 B.S., Applied Meteorology, Nanjing Institute of Meteorology, Nanjing, China

## ACADEMIC POSITIONS

- (2010-present) Professor, Department of Ecosystem Science and Sustainability, Colorado State University, Fort Collins, Colorado
- (2007-present) Director, Senior Research Scientist, USDA UV-B Monitoring and Research Program, Natural Resource Ecology Laboratory, Colorado State University, Fort Collins, Colorado
- (2007-present) Joint Professor, Department of Soil and Crop Sciences, and Graduate Degree Program in Ecology, Colorado State University, Fort Collins, Colorado
- (2003-2007) Joint Assistant Professor, Department of Soil and Crop Sciences, and Graduate Degree Program in Ecology, Colorado State University, Fort Collins, Colorado
- (2002-2007) Research Scientist III/Group Leader, Remote Sensing, Modeling and Effects, USDA UV-B Monitoring and Research Program, Natural Resource Ecology Laboratory, Colorado State University, Fort Collins, Colorado
- (1999-2002) Research Scientist, USDA UV-B Monitoring and Research Program, Cooperative Institute for Research in the Atmosphere, Colorado State University, Fort Collins, Colorado
- (1997-1999) Postdoctoral Fellow, Environmental and Societal Impacts Group, National Center for Atmospheric Research, Boulder, Colorado
- (1993-1997) Research Assistant and graduate lecturer, Applied Meteorology Laboratory, Department of Agronomy, Purdue University, West Lafayette, Indiana
- (1991-1992) Research Assistant, USDA Crop Simulation Research Unit, Department of Plant and Soil Sciences, Mississippi State University, Mississippi State, Mississippi
- (1987-1990) Lecturer, Applied Meteorology Laboratory, Anhui College of Science and Technology, China
- (1982-1985) Assistant Lecturer, Applied Meteorology Laboratory, Anhui College of Science and Technology, China

## HONORS AND AWARDS

- 2018 WCNR Outstanding Publication Award Colorado State University
- 2010, 2009 NREL Most Publications Award, Natural Resource Ecology Laboratory, Colorado State University
- 2009 Lifetime Distinguished International Service Award, Colorado State University
- 2005 Fellow, SPIE- the International Society for Optics and Photonics
- 2002 Excellent Dedication and Service, SPIE- the International Society for Optics and Photonics

## **COMMITTEES**

- |              |  |
|--------------|--|
| 2007-present | CSU NREL Executive Committee                       |
| 2010-2018    | CSU Internationalization Plan Operations Committee |
| 2008-2010    | GDPE Review Committee                              |

## **PROFESSIONAL AFFILIATIONS AND ACTIVITIES**

### **Memberships in professional societies:**

- SPIE- the International Society for Optics and Photonics
- American Society of Agronomy
- American Meteorological Society
- American Geophysical Union

### **Office in professional societies:**

- Chair, Remote and In-situ Sensing Program, SPIE- the International Society for Optics and Photonics, 2003-2007

### **Editorial boards:**

- Executive Associate Editor-in-Chief, Engineering, 2016-present
- Editor-in-Chief, Frontiers of Earth Science, 2012-present
- Editorial Board member, Journal of Meteorology and Disaster Reduction Research, 2009-2019
- Associate Editor-in-Chief, Science and Technology Review, 2010-2014
- Member, The Board of Editors for SPIE, 2007-2013
- Editorial Board member, Frontiers of Environmental Science & Engineering, 2008-2013
- Editor-in-Chief, Journal of Applied Remote Sensing, 2007-2013

### **Grant Refereeing:**

- Referee technical proposals for NSF, USDA, NASA and Natural Environmental Research Council

### **Manuscript Refereeing:**

- Referee for scientific papers for *Journal of Geophysical Research*, *Applied Optics*, *Journal of Agronomy*, *Journal of Photochemistry and Photobiology*, *Journal of Agricultural and Forest Meteorology*, *Solar Energy*, *European Journal of Applied Remote Sensing*, *Journal of Remote Sensing*, *Frontiers of Earth Science*, *Journal of Environmental Engineering*

## **OTHER ACTIVITIES/ACCOMPLISHMENTS – SERVICE/OUTREACH**

- Director, ColoradoView, affiliate membership in the AmericaView/USGS, National Consortium for Remote Sensing Education, Research and Applications (CSU)

## **CONTRACTS & GRANTS**

### **Funded Projects as PI**

- |        |   |
|--------|---|
| (2019) | Global Change/Ultraviolet Radiation Monitoring and Research Program, PI,<br>USDA – NIFA, \$1,305,638                                |
| (2019) | StateView Program Development and Operations for the State of Colorado, PI,<br>USGS – AmericaView Member Services Program, \$23,500 |
| (2018) | Global Change/Ultraviolet Radiation Monitoring and Research Program, PI,  |

- USDA – NIFA, \$1,305,638
- (2018) StateView Program Development and Operations for the State of Colorado, PI,  
USGS – AmericaView Member Services Program, \$23,500
- (2014-2018) Urban Tree Interception of UV (A/V) Radiation and Its Genetic Consequences, PI,  
USDA – NIFA, Southern University/Ag Research & Extension Center \$95,000
- (2017) Global Change/Ultraviolet Radiation Monitoring and Research Program, PI,  
USDA – NIFA, \$1,305,638
- (2016) Global Change/Ultraviolet Radiation Monitoring and Research Program, PI,  
USDA – NIFA, \$1,305,147
- (2016) StateView Program Development and Operations for the State of Colorado, PI,  
USGS – AmericaView Member Services Program, \$23,500
- (2015) Global Change/Ultraviolet Radiation Monitoring and Research Program, PI,  
USDA – NIFA, \$1,309,684
- (2015) StateView Program Development and Operations for the State of Colorado, PI,  
USGS – AmericaView Member Services Program, \$23,500
- (2014) Global Change/Ultraviolet Radiation Monitoring and Research Program, PI,  
USDA – NIFA, \$1,311,034
- (2014) StateView Program Development and Operations for the State of Colorado, PI,  
USGS – AmericaView Member Services Program, \$24,900
- (2013) Global Change/Ultraviolet Radiation Monitoring and Research Program, PI,  
USDA – NIFA, \$1,206,270
- (2013) StateView Program Development and Operations for the State of Colorado, PI,  
USGS – AmericaView Member Services Program, \$23,500
- (2012) Global Change/Ultraviolet Radiation Monitoring and Research Program, PI,  
USDA – NIFA, \$1,208,045
- (2012) StateView Program Development and Operations for the State of Colorado, PI,  
USGS – AmericaView Member Services Program, \$23,500
- (2011) Global Change/USDA Ultraviolet Radiation Monitoring and Research Program, PI,  
USDA – NIFA, \$1,307,746
- (2011) StateView Program Development and Operations for the State of Colorado, PI,  
USGS – AmericaView Member Services Program, \$23,800
- (2010) Global Change/USDA Ultraviolet Radiation Monitoring and Research Program, PI,  
USDA – NIFA, \$1,310,381
- (2010) StateView Program Development and Operations for the State of Colorado, PI,  
USGS – AmericaView Member Services Program, \$25,000
- (2009) Global Change/Ultraviolet Radiation CO, PI, USDA CSREES, \$1,312,660
- (2009) StateView Program Development and Operations for the State of Colorado, PI,  
USGS – AmericaView Member Services Program, \$23,152
- (2008) USDA UV-B Monitoring and Research Program: Enhancement of Network  
Data Products, Research Support and National Research Collaboration, PI,  
USDA CSREES, \$1,413,474
- (2008-2013) Integrated Bioclimatic-Dynamic Modeling of Climate Change Impacts on Agricultural and Invasive  
Plant Distributions in the United States, PI, USDA/CSREES/NRI, \$530,000
- (2007) Development and Management of a USDA UV-B Monitoring Program, PI, USDA Global Change

- (2006) Program, USDA CSREES W-502-Hatch/Multistate/McIntire Stennis, \$1,320,231  
Development of a Fine-Resolution Land Surface Emissivity Parameterization, PI,  
NAVY – University of Wisconsin, \$50,000
- (2006) Molecular Aspects of Plant Secondary Metabolism in Response to UV-B Radiation, PI,  
USDA CSREES, \$5,000
- (2005) International Conference on Resources, Ecosystems, and Sustainability of Arid and Semi-arid  
Regions, PI, UNESCO Participation Programme, \$15,000

#### **Funded Projects as Co-PI**

- (2006) USDA UV-B Monitoring and Research Program, Co-PI, USDA CSREES, \$2,018,497
- (2005) Development and Management of a USDA UV-B Monitoring Program, Co-PI,  
USDA CSREES, \$1,851,975
- (2004) Development and Management of USDA UV-B Monitoring Program, Co-PI,  
USDA Global Change Program, \$1,868,408
- (2003) Development and Management of USDA UV-B Monitoring Program, Co-PI,  
USDA Global Change Program, \$2,089,617
- (2002) Development and Management of USDA UV-B Monitoring Program, CoPI,  
USDA Global Change Program, \$1,423,000
- (2001) Development and Management of USDA UV-B Monitoring Program, CoPI,  
USDA Global Change Program, \$1,423,000

#### **PUBLISHED WORKS**

##### **Books:**

- Gao, W., and Z. Gao. 2015. Applications of Remote Sensing and Numerical Modeling Technology. Science Press, Beijing, China
- Gao, W., D. Schmoldt, and J. R. Slusser. 2009. UV Radiation in Global Climate Change: Measurements, Modeling and Effects on Ecosystems. Springer-Verlag Berlin Heidelberg and Tsinghua University Press, Beijing, China.
- Qu, J., W. Gao, M. Kafatos, R. Murphy and V. Salomonson. 2006. Earth Science Satellite Remote Sensing, Science and Instruments, Volume I. Tsinghua University Press, Beijing and Springer-Verlag GmbH Berlin Heidelberg.
- Qu, J., W. Gao, M. Kafatos, R. Murphy and V. Salomonson. 2006. Earth Science Satellite Remote Sensing, Data, Computational Processing, and Tools, Volume II. Tsinghua University Press, Beijing and Springer-Verlag GmbH Berlin Heidelberg.

##### **Special Issues:**

- Slusser, J. R., W. Gao, and J. Herman (eds.). 2005. Advances in UV Ground- and Space-based Measurements and Modeling. Optical Engineering, 44(4)
- Krizek, D. T., and W. Gao (eds.). 2004. Ultraviolet Radiation and Terrestrial Ecosystems. Photochemistry and Photobiology, 79(5)
- Gao, W., J. R. Slusser, R. H. Grant, and G. M. Heisler (eds.). 2003. UV Radiation and Its Impacts on Agriculture and Forests. Agricultural and Forest Meteorology, 120(1-4)
- Slusser, J. R., W. Gao, and R. McKenzie (eds.). 2002. The UV Measurements and Modeling. Optical Engineering, 41(12)

**Refereed Article:**

- Alsajri, F. A., C. Wijewardana, J. T. Irby, N. Bellaloui, L. J. Krutz, B. Golden, W. Gao, K. R. Reddy. 2020. Developing functional relationships between temperature and soybean yield and seed quality. *Agronomy Journal*, 112:194–204, doi: 10.1002/agj2.20034
- Chen, M., Z. Sun, J. M. Davis, Y.-A. Liu, C. A. Corr, and W. Gao. 2019. Improving the mean and uncertainty of ultraviolet multi-filter rotating shadowband radiometer in situ calibration factors: utilizing Gaussian process regression with a new method to estimate dynamic input uncertainty. *Atmospheric Measurement Techniques*, 12, 935-953. doi: 10.5194/amt-12-935-2019
- Singh, B., D. R. Chastainb, S. Jumaa, C. Wijewardana, E. D. Redona, W. Gao, K. R. Reddy. 2019. Projected day/night temperatures specifically limits rubisco activity and electron transport in diverse rice cultivars. *Environmental and Experimental Botany*, 159, 191-199
- Jumaa, S.H., E. D. Redona, T. Walker, W. Gao, And K. R. Reddy. 2019. Developing screening tools for early-season high- and low-temperature stress. *Sabrao Journal of Breeding and Genetics*, 51:12-36
- Wijewardana, C., F. A. Alsajri, J. T. Irby, L. J. Krutz, B. Golden, W. B. Henry, W. Gao, and K. R. Reddy. 2019. Physiological assessment of water deficit in soybean using midday leaf water potential and spectral features. *Journal of Plant Interactions*, 14:1, 533-543, DOI: 10.1080/17429145.2019.1662499
- Wijewardana, C., K.R. Reddy, L.J. Krutz, W. Gao, and N. Bellaloui. 2019. Drought stress has transgenerational effects on soybean seed germination and seedling vigor. *PLoS ONE*, 14(9): e0214977. <https://doi.org/10.1371/journal.pone.021497700> (IF: 2.776)
- Chen, Z., W. Gao, K. R. Reddy, M. Chen, S. Taduri, S. L. Meyers, M. W. Shankle. 2019. Ultraviolet (UV) B effects on growth and yield of three contrasting sweet potato cultivars. *Photosynthetica*, 58(1), 37-44. doi: 10.32615/ps.2019.137
- Chen, M., W. J. Parton, M. D. Hartman, S. J. Del Grosso, W. K. Smith, A. K. Knapp, S. Lutz, J. D. Derner, C. J. Tucker, D. S. Ojima, J. D. Volesky, M. B. Stephenson, W. H. Schacht, W. Gao. 2019. Assessing precipitation, evapotranspiration, and NDVI as controls of US Great Plains plant production. *Ecosphere*, 10(10), e02889
- Alsajri, F., B. Singh, C. Wijewardana, J. Irby, W. Gao, K. R. Reddy. 2019. Evaluating Soybean Cultivars for Low- and High-Temperature Tolerance During the Seedling Growth Stage. *Agronomy*, 9(13), 1-20. doi:10.3390/agronomy9010013
- Asao, S., W. J. Parton, M. Chen, and W. Gao. 2018. Photodegradation accelerates ecosystem N cycling in a simulated California grassland. *Ecosphere* 9(8):e02370. 10.1002/ecs2.2370
- Wijewardana, C., K.R. Reddy, M.W. Shankle, S. Meyers, and W. Gao. 2018. Low and high-temperature effects on sweetpotato storage root initiation and early transplant establishment. *Scientia Horticulturae*, 240:38-48. doi: 10.1016/j.scienta.2018.05.052.
- Ai, J., W. Gao, Z. Gao, R. Shi, and C. Zhang. 2017. Phenology-based *Spartina alterniflora* mapping in coastal wetland of the Yangtze Estuary using time series of GaoFen satellite no.1 wide field of view imagery. *Journal of Applied Remote Sensing*, 11(2), 026020. doi: 10.1117/1.JRS.11.026020
- Chen M., W. J. Parton, S. Del Grosso, M. D. Hartman, K. Day, C. J. Tucker, J. Derner, A. Knapp, W. C. Smith, D. Ojima, and W. Gao. 2017. The Signature of Sea Surface Temperature Anomalies on the Dynamics of Semi-arid Grassland Productivity. *Ecosphere*. 8, e02069. doi: 10.1002/ecs2.2069
- Hallar, A. G., N. P. Molotch, J. L. Hand, B. Livney, I. B. McCubbin, R. Petersen, J. Michalsky, D. Lowenthal, and K. E. Kunkel. 2017. Impacts of increasing aridity and wildfires on aerosol loading in the intermountain Western US. *Environmental Research Letters*, Volume 12, Number 1
- Liang, X., Y. Wu, R. G. Chambers, D. L. Schmoldt, W. Gao, C. Liu, Y. Liu, C. Sun, and J. A. Kennedy. 2017. Determining climate effects on US total agricultural productivity. *Proceedings for the National Academy of Sciences of the United States of America (PNAS)*, vol. 114 no. 12, E2285–E2292, doi: 10.1073/pnas.1615922114

- Liu, P., R. Shi, and W. Gao. 2017. Estimating leaf chlorophyll contents by combining multiple spectral indices with an artificial neural network. *Earth Science Informatics*, 11, 147-156. doi: 10.1007/s12145-017-0319-1
- Liu, P., R. Shi, C. Zhang, Y. Zeng, J. Wang, Z. Tao, and W. Gao. 2017. Integrating multiple vegetation indices via an artificial neural network model for estimating the leaf chlorophyll content of *Spartina alterniflora* under interspecies competition. *Environmental Monitoring and Assessment*, 189:596. doi: 10.1007/s10661-017-6323-6
- Reddy, K. R., D. Brand, C. Wijewardana, and W. Gao. 2017. Temperature Effects on Cotton Seedling Emergence, Growth, and Development. *Agronomy Journal*, 109(4), 1379-1387, doi:10.2134/agronj2016.07.0439
- Sun, Z., J. Davis, and W. Gao. 2017. Estimating Error Covariance and Correlation Region in UV Irradiance Data Fusion by Combining TOMS-OMI and UVMRP Ground Observations. *IEEE Transactions on Geoscience and Remote Sensing*, vol. 56, no. 1, doi: 10.1109/TGRS.2017.2748031
- Chang, N.B., C. Mostafiz, Z. Sun, W. Gao, and C. Chen. 2017. Developing a prototype satellite-based cyber-physical system for smart wastewater treatment. 2017 IEEE 14th International Conference on Networking, Sensing and Control (ICNSC), 339-344. doi: 10.1109/ICNSC.2017.8000115
- Bai, K., N. Chang, and W. Gao. 2016. Quantification of relative contribution of Antarctic ozone depletion to increased austral extratropical precipitation during 1979-2013. *Journal of Geophysical Research: Atmospheres*, 121, 1459-1474. doi: 10.1002/2015JD024247
- Brand, D., C. Wijewardana, W. Gao, and K.R. Reddy. 2016. Interactive effects of carbon dioxide, low temperature, and ultraviolet-B radiation on cotton seedling root and shoot morphology and growth. *Frontiers of Earth Science* 10:607-620
- Reddy, K. R., H. Patro, S. Lokhande, N. Bellaloui, and W. Gao. 2016. Ultraviolet-B Radiation Alters Soybean Growth and Seed Quality. *Food and Nutrition Sciences*, 7, 55-66. doi: 10.4236/fns.2016.71007
- Wijewardana, C., W. Brien Henry, W. Gao, and K. Raja Reddy. 2016. Interactive effects on CO<sub>2</sub>, drought, and ultraviolet-B radiation on maize growth and development. *Journal of Photochemistry & Photobiology, B: Biology* 160 198–209. doi: 10.1016/j.jphotobiol.2016.04.004
- Chen, M., J. Davis, and W. Gao. 2014. A new cloud screening algorithm for ground-based direct-beam solar radiation. *Journal of Atmosphere and Oceanic Technology*, 31(12), 2591-2605. doi: 10.1175/JTECH-D-14-00095.1
- Liu, C., M. Chen, R. Shi, and W. Gao. 2014. Retrievals of aerosol optical depth and total column ozone from Ultraviolet Multifilter Rotating Shadowband Radiometer measurements based on an optimal estimation technique. *Frontiers of Earth Science*, 8(4), 610-624. doi: 10.1007/s11707-014-0455-6
- Liu, S., X. Liang, W. Gao, and T. J. Stohlgren. 2014. Regional climate model downscaling may improve the prediction of alien plant species distributions. *Frontiers of Earth Science*, 8(4), 457-471. doi: 10.1007/s11707-014-0457-4
- Singh, S. K., K. R. Reddy, V. R. Reddy, and W. Gao. 2014. Maize growth and developmental responses to temperature and ultraviolet-B radiation interaction. *Photosynthetica*, 52(2), 262-271. doi: 10.1007/s11099-014-0029-6
- Xu, M., X. Liang, A. Samel, and W. Gao. 2014. MODIS consistent vegetation parameter specifications and their impacts on regional climate simulations. *Journal of Climate*, 27(22), 8578-8596. doi: 10.1175/JCLI-D-14-00082.1
- Zhang, C., S. Kellomäki, Q., Zhong, K. Wang, J. Gong, Y. Qiao, X. Zhou, and W. Gao. 2014. Seasonal biomass allocation in a boreal perennial grass (*Phalaris arundinacea* L.) under elevated temperature and CO<sub>2</sub> with varying water regimes. *Plant Growth Regulation*, 74(2), 153-164. doi: 10.1007/s10725-014-9907-y
- Reddy, K. R., S. K. Singh, S. Koti, V. G. Kakani, D. Zhao, W. Gao, and V. R. Redd. 2013. Quantifying the Effects of Corn Growth and Physiological Responses to Ultraviolet-B Radiation for Modeling. *Agronomy Journal*, 105(5), 1367-1377. doi: 10.2134/agronj2013.0113
- Tang, H., M. Chen, J. Davis, and W. Gao. 2013. Comparison of aerosol optical depth of UV-B monitoring and research program (UVMRP), AERONET and MODIS over continental united states. *Frontiers of Earth Science*, 7(2), 129-140. doi: 10.1007/s11707-013-0376-9

- Gao, Z., W. Gao, and N. Chang. 2012. Evaluation of Dynamic Linkages between Evapotranspiration and Land Use/Land Cover Changes with Landsat TM and ETM+ Data. *International Journal of Remote Sensing*, 33(12), 3733-3750. doi: 10.1080/01431161.2011.636766
- Gao, Z., W. Gao, and N. Chang. 2012. Spatial Statistical Analyses of Global Trends of Ultraviolet B Fluxes in the Continental United States. *GIScience & Remote Sensing*, 49(5), 735-754. doi: 10.2747/1548-1603.49.5.735
- Liang, X., M. Xu, W. Gao, K. R. Reddy, K. Kunkel, D. L. Schmoldt, and A. N. Samel. 2012. A Distributed Cotton Growth Model Developed from GOSSYM and Its Parameter Determination. *Agronomy Journal*, 104(3), 661-674. doi: 10.2134/agronj2011.0250
- Liang, X., M. Xu, W. Gao, K. R. Reddy, K. Kunkel, D. L. Schmoldt, and A. N. Samel. 2012. Physical Modeling of U.S. Cotton Yields and Climate Stresses during 1979 to 2005. *Agronomy Journal*, 104(3), 675-683. doi: 10.2134/agronj2011.0251
- Liang, X., M. Xu, X. Yuan, T. Ling, H. I. Choi, F. Zhang, L. Chen, S. Liu, S. Su, F. Qiao, J. X. L. Wang, K. E. Kunkel, W. Gao, E. Joseph, V. Morris, T.-W. Yu, J. Dudhia, and J. Michalakes. 2012. Regional Climate-Weather Research and Forecasting Model. *Bulletin of the American Meteorological Society*, 93(9), 1363-1387. doi: 10.1175/BAMS-D-11-00180.1
- Liu, Y., M. Wei, W. Gao, and N. Li. 2012. Short-term automatic forecast algorithm of severe convective cloud identification using FY-2 IR images. *Journal of Remote Sensing*, 16(1), 79-92. doi: 10.11834/jrs.20120435
- Zhang, H., W. Gao, and R. Shi. 2012. Reconstruction of high-quality LAI time-series product based on long-term historical database. *Journal of Remote Sensing*, 16(5), 986-991
- Gao, Z., W. Gao, and N. Chang. 2011. Integrating temperature vegetation dryness index (TVDI) and regional water stress index (RWSI) for drought assessment with the aid of LANDSAT TM/ETM+ images. *International Journal of Applied Earth Observation and Geoinformation*, 13(3), 495-503. doi:10.1016/j.jag.2010.10.005
- Gao, Z., C. Liu, W. Gao, and N. Chang. 2011. A coupled remote sensing and the Surface Energy Balance with Topography Algorithm (SEBTA) to estimate actual evapotranspiration over heterogeneous terrain. *Hydrology and Earth System Sciences*, 15, 119-139. doi: 10.5194/hess-15-119-2011
- Gao, Z., X. Xie, W. Gao, and N. Chang. 2011. Spatial analysis of terrain-impacted photosynthetic active radiation (PAR) using MODIS data. *GIScience & Remote Sensing*, 48(4), 501-521. doi: 10.2747/1548-1603.48.4.501
- Liu, C., Y. Li, W. Gao, R. Shi, and K. Bai. 2011. Retrieval of columnar water vapor using multispectral radiometer measurements over northern China. *Journal of Applied Remote Sensing*, 5(1), 053558. doi: 10.1117/1.3647483
- Liu, S., X. Liang, W. Gao, Y. He, and T. Ling. 2011. Regional climate model simulations of the 1998 summer China flood: dependence on initial and lateral boundary conditions. *The Open Atmospheric Science Journal*, 5, 96-105. doi: 10.2174/1874282301105010096
- Zhong, H., R. Shi, C. Liu, and W. Gao. 2011. The modification of the abnormal remote sensing data from the DVB-S system based on MODIS. *Remote Sensing for Land & Resources*, 22(1), 73-76. doi: 10.6046/gtzyyg.2011.01.14
- Chang, N., R. Feng, Z. Gao, and W. Gao. 2010. Skin cancer incidence is highly associated with ultraviolet-B radiation history. *International Journal of Hygiene and Environmental Health*, 213(5), 359-368. doi: 10.1016/j.ijheh.2010.06.006
- Gao, Z., W. Gao, and N. Chang. 2010. Comparative analyses of the ultraviolet-B flux over the continental United State based on the NASA total ozone mapping spectrometer data and USDA ground-based measurements. *Journal of Applied Remote Sensing*, 4(1), 043547. doi: 10.1117/1.3507249
- Gao, Z., W. Gao, and N. Chang. 2010. Detection of Multidecadal Changes in UVB and Total Ozone Concentrations over the Continental US with NASA TOMS Data and USDA Ground-based Measurements. *Remote Sensing*, 2(1), 262-277. doi: 10.390/rs2010262

- Smith, W. K., W. Gao, H. Steltzer, M. D. Wallenstein, and R. Tree. 2010. Moisture availability influences the effect of ultraviolet-B radiation on leaf litter decomposition. *Global Change Biology*, 16(1), 484-495. doi: 10.1111/j.1365-2486.2009.01973.x
- Xu, M., X. Liang, W. Gao, and N. Krotkov. 2010. Comparison of TOMS retrievals and UVMRP measurements of surface spectral UV radiation in the United States. *Atmospheric Chemistry and Physics*, 10, 8669-8683. doi: 10.5194/acp-10-8669-2010
- Zhang, H., H. Huang, A. Lim, R. Holz, S. Dutcher, F. Nagle, L. Gumley, J. Wang, R. Shi, and W. Gao. 2010. Analysis and characterization of the synergistic AIRS and MODIS cloud-cleared radiances. *Frontiers of Earth Science in China*, 4(3), 363-373. doi: 10.1007/s11707-010-0023-7
- Bao, Y., W. Gao, and Z. Gao. 2009. Estimation of winter wheat biomass based on remote sensing data at various spatial and spectral resolutions. *Frontiers of Earth Science*, 3(1), 118-128. doi: 10.1007/s11707-009-0012-x
- Corr, C. A., N. Krotkov, S. Madronich, J. R. Slusser, B. Holben, W. Gao, J. Flynn, B. Lefer, and S. M. Kreidenweis. 2009. Retrieval of aerosol single scattering albedo at ultraviolet wavelengths at the T1 site during MILAGRO. *Atmospheric Chemistry and Physics*, 9(15), 5813-5827. doi: 10.5194/acp-9-5813-2009
- Gao, Z., J. Ning, and W. Gao. 2009. Response of land surface temperature to coastal land use/cover change by remote sensing. *Transactions of the Chinese Society of Agricultural Engineering*, 25(9), 274-281.
- Gao, Z., W. Zhang, W. Gao, and N. Chang. 2009. Modeling the land surface heat exchange process with the aid of moderate resolution imaging spectroradiometer images. *Journal of Applied Remote Sensing*, 3(1), 033573. doi: 10.1117/1.3290811
- Liu, C., W. Gao, and Z. Gao. 2009. Estimation of regional surface evapotranspiration using MODIS Products. *Advances in Water Science*, 20(6), 782-788.
- Liu, S., W. Gao, M. Xu, X. Wang, and X. Liang. 2009. China summer precipitation simulations using an optimal ensemble of cumulus schemes. *Frontiers of Earth Science*, 3(2), 248-257. doi: 10.1007/s11707-009-0022-8
- Smith, W. K., W. Gao, and H. Steltzer. 2009. Current and future impacts of ultraviolet radiation on the terrestrial carbon balance. *Frontiers of Earth Science*, 3(1), 34-41.
- Barnes, P. W., S. D. Flint, J. R. Slusser, W. Gao, and R. J. Ryel. 2008. Diurnal changes in epidermal UV transmittance of plants in naturally high UV environments. *Physiologia Plantarum*, 133(2), 363-372. doi: 10.1111/j.1399-3054.2008.01084.x
- Lantz, K., P. Disterhoft, J. Slusser, W. Gao, J. Berndt, G. Bernhard, R. Booth, J. Ehamjian, L. Harrison, G. Janson, P. Johnston, P. Kiedron, R. McKenzie, M. Kimlin, P. Neale, M. O'Neill, V. V. Quang, G. Seckmeyer, T. Taylor, S. Wuttke, and J. Michalsky. 2008. The 2003 north American interagency intercomparison of ultraviolet spectroradiometers, part A: scanning and spectrograph instruments. *Journal of Applied Remote Sensing*, 2(1), 023547.
- Liu, S., X. Liang, W. Gao, and H. Zhang. 2008. Application of Climate-Weather Research and Forecasting Model (CWRF) in China: Domain Optimization. *Chinese Journal of Atmospheric Sciences*, 32(3), 457-468.
- Singh, S. K., G.-K. Surabhi, W. Gao, and K. R. Reddy. 2008. Assessing genotypic variability of cowpea (*Vigna unguiculata* [L.] Walp.) to current and projected ultraviolet-B radiation. *Journal of Photochemistry and Photobiology B: Biology*, 93(2), 71-81. doi: 10.1016/j.jphotobiol.2008.07.002
- Koti, S., K. R. Reddy, V. G. Kakani, D. Zhao, and W. Gao. 2007. Effects of carbon dioxide, temperature and ultraviolet-B radiation and their interactions soybean (*Glycine max* L.) growth and development. *Environmental and Experimental Botany*, 60(1), 1-10. doi: 10.1016/j.envexpbot.2006.05.001
- Sullivan, J. H., D. C. Gitz III, L. Liu-Gitz, C. Xu, W. Gao, and J. Slusser. 2007. Coupling short-term changes in ambient UV-B levels with induction of UV-Screening compounds. *Photochemistry and Photobiology*, 83(4), 863-870. doi: 10.1111/j.1751-1097.2007.00138.x



- Thines, N. J., L. A. Shipley, J. H. Bassman, J. K. Fellman, D. S. Mattison, J. R. Slusser, and W. Gao. 2007. Effects of Enhanced UV-B Radiation on Plant Chemistry: Nutritional Consequences for a Specialist and Generalist Lagomorph. *Journal of Chemical Ecology*, 33(5), 1025-1039. doi: 10.1007/s10886-007-9280-7
- Grant, R. H., K. Apostol, and W. Gao. 2006. Biologically effective UV-B exposures of an oak-hickory forest understory during leafout. *Agricultural and Forest Meteorology*, 132(1-2), 28-43.
- Koti, S., K. R. Reddy, G. W. Lawrence, V. R. Reddy, V. G. Kakani, D. Zhao, and W. Gao. 2006. Effect of enhanced UV-B radiation on reniform nematode (*Rotylenchus reniformis* Linford and Oliveira) populations in cotton (*Gossypium hirsutum* L.). *Plant Pathology Journal*, 6(1), 51-59.
- Wang, X., W. Gao, J. R. Slusser, J. Davis, B. Olson, S. Janssen, G. Janson, B. Durham, R. Tree, and R. Deike. 2006. USDA UV-B monitoring system: An application of centralized architecture. *Computers and Electronics in Agriculture*, 64(2), 326-332. doi: 10.1016/j.compag.2008.04.006
- Gong, L., X. Pan, Q. Shi, Z. Wang, and W. Gao. 2005. Land use pattern and influential factors in the upper reaches of Tarim River. *Resources Science*, 27(4), 71-75.
- Liang, X., M. Xu, W. Gao, K. Kunkel, J. Slusser, Y. Dai, Q. Min, P. R. Houser, M. Rodell, C. B. Schaaf, and F. Gao. 2005. Development of land surface albedo parameterization based on Moderate Resolution Imaging Spectroradiometer (MODIS) data. *Journal of Geophysical Research: Atmospheres*, 110(D11), D11107. doi: 10.1029/2004JD005579
- Zhao, D., K. R. Reddy, V. G. Kakani, S. Koti, and W. Gao. 2005. Physiological causes of cotton fruit abscission under conditions of high temperature and enhanced ultraviolet-B radiation. *Physiologia Plantarum*, 124(2), 189-199. doi: 10.1111/j.1399-3054.2005.00491.x
- Gao, W., Y. Zheng, J. R. Slusser, G. M. Heisler, R. H. Grant, J. Xu, and D. He. 2004. Effects of supplementary ultraviolet-B irradiance on maize yield and qualities: a field experiment. *Photochemistry and Photobiology*, 80(1), 127-131. doi: 10.1111/j.1751-1097.2004.tb00060.x
- Heisler, G. M., R. H. Grant, W. Gao, and J. R. Slusser. 2004. Solar ultraviolet-B radiation in urban environments: the case of Baltimore, Maryland. *Photochemistry and Photobiology*, 80(3), 422-428. doi: 10.1111/j.1751-1097.2004.tb00108.x
- Kakani, V. G., K. R. Reddy, D. Zhao, and W. Gao. 2004. Senescence and hyperspectral reflectance of cotton leaves exposed to ultraviolet-B radiation and carbon dioxide. *Physiologia Plantarum*, 121(2), 250-257. doi: 10.1111/j.1399-3054.2004.00314.x
- Kakani, V. G., K. R. Reddy, D. Zhao, and W. Gao. 2004. Leaf senescence and hyperspectral reflectance of cotton leaves exposed to ultraviolet-B radiation and carbon dioxide. *Physiologia Plantarum*, 121(2), 250-257.
- Krizek, D. T., and W. Gao. 2004. Introduction - ultraviolet radiation and terrestrial ecosystems. *Photochemistry and Photobiology*, 79(5), 379-381.
- Krizek, D. T., and W. Gao. 2004. Ultraviolet Radiation and Terrestrial Ecosystems. *Photochemistry and Photobiology*, 81(5), 1021-1025. doi: 10.1562/2005-08-18-RA-654
- Reddy, K. R., V. G. Kakani, D. Zhao, S. Koti, and W. Gao. 2004. Interactive Effects of Ultraviolet-B Radiation and Temperature on Cotton Physiology, Growth, Development and Hyperspectral Reflectance. *Photochemistry and Photobiology*, 79(5), 416-427. doi: 10.1111/j.1751-1097.2004.tb00029.x
- Zhao, D., K. R. Reddy, V. G. Kakani, A. R. Mohammed, J. J. Read, and W. Gao. 2004. Leaf and canopy photosynthetic characteristics of cotton (*Gossypium hirsutum*) under elevated CO<sub>2</sub> concentration and UV-B radiation. *Journal of Plant Physiology*, 161(5), 581-590. doi: 10.1078/0176-1617-01229
- Bawhey, C. I., R. H. Grant, and W. Gao. 2003. Digital measurement of heliotropic leaf response in soybean cultivars and leaf exposure to solar UVB radiation. *Agricultural and Forest Meteorology*, 120(1-4), 161-175.
- Gao, W., R. H. Grant, G. M. Heisler and J. R. Slusser. 2003. Ultraviolet-B radiation in a row-crop canopy: An extended 1-D model. *Agricultural and Forest Meteorology*, 120(1-4), 141-151.

- Gao, W., Y. Zheng, J. R. Slusser and G. M. Heisler. 2003. Impact of enhanced Ultraviolet-B irradiance on cotton growth, development, yield, and qualities under field conditions. *Agricultural and Forest Meteorology*, 120(1-4), 241-248.
- Grant, R. H., G. M. Heisler, W. Gao, and M. Jenks. 2003. Ultraviolet leaf reflectance of common urban trees and the prediction of reflectance from leaf surface characteristics. *Agricultural and Forest Meteorology*, 120(1-4), 127-139.
- Grant, R. H., and W. Gao. 2003. Diffuse fraction of UV radiation under partly cloudy skies as defined by the Automated Surface Observation System (ASOS). *Journal of Geophysical Research: Atmospheres*, 108(D2), 4046-4055. doi: 10.1029/2002JD002201
- Heisler, G. M., R. H. Grant, and W. Gao. 2003. Individual-and scattered-tree influences on Ultraviolet irradiance. *Agricultural and Forest Meteorology*, 120(1-4), 113-126.
- Heisler, G. M., R. H. Grant, W. Gao, and J. R. Slusser. 2003. Ultraviolet radiation and its impacts on agriculture and forests. *Agricultural and Forest Meteorology*, 120(1-4), 3-7. doi: 10.1016/j.agrformet.2003.08.007
- Reddy, K. R., V. G. Kakani, D. Zhao, A. R. Mohammed, and W. Gao. 2003. Cotton responses to Ultraviolet-B radiation: experimentation and algorithm development. *Agricultural and Forest Meteorology*, 120, 249-266.
- Tsvetsinskaya, E. A., L. O. Mearns, T. Mavromatis, W. Gao, L. R. McDaniel, and M. W. Downton. 2003. The effect of spatial scale of climate change scenarios on simulated Maize, winter wheat, and rice production in southeastern United States. *Climatic Change*, 60(1), 37-71.
- Zheng, Y., W. Gao, J. R. Slusser, R. H. Grant, and C. Wang. 2003. Yield and yield formation of field winter wheat in response to supplemental solar UV-B radiation. *Agricultural and Forest Meteorology*, 120(1-4), 279-284. doi: 10.1016/j.agrformet.2003.08.022
- Gao, W., R. H. Grant, G. M. Heisler, and J. R. Slusser. 2002. A geometric ultraviolet-B radiation transfer model applied to vegetation canopies. *Agronomy Journal*, 94(3), 475-482.
- Grant, R. H., G. M. Heisler, and W. Gao. 2002. Estimation of Pedestrian Level UV Exposure Under Trees. *Photochemistry and Photobiology*, 75(4), 369-376.
- Gao, W., J. Slusser, J. Gibson, G. Scott, D. Bigelow, J. Kerr, and B. McArthur. 2001. Direct-Sun column ozone retrieval by the ultraviolet multifilter rotating shadow-band radiometer and comparison with those from Brewer and Dobson spectrophotometers. *Applied Optics*, 40(19), 3149-3155. doi: 10.1364/AO.40.003149

#### **Book Chapters:**

- Gao, W., J. M. Davis, R. Tree, J. R. Slusser, and D. Schmoldt. 2009. An ultraviolet radiation monitoring and research program for agriculture. In W. Gao, D. Schmoldt, and J. Slusser (eds.), *UV Radiation in Global Climate Change: Measurements, Modeling and Effects on Ecosystems* (pp. 205-243). Springer-Verlag GmbH Berlin Heidelberg, and Tsinghua University Press, Beijing, China.
- Gao, W., Z. Gao, and N. Chang. 2009. Comparative analysis of UVB between Nimbus 7/TOMS satellite estimates and ground-based measurements. In W. Gao, D. Schmoldt, and J. Slusser (eds.), *UV Radiation in Global Climate Change: Measurements, Modeling and Effects on Ecosystems* (pp. 270-290). Springer-Verlag GmbH Berlin Heidelberg, and Tsinghua University Press Beijing, China
- Qi, Y., G. Heisler, W. Gao, T. C. Vogelmann, and S. Bai. 2009. Characteristics of UV-B radiation tolerance in broadleaf trees in southern USA. In W. Gao, D. Schmoldt, and J. Slusser (eds.), *UV Radiation in Global Climate Change: Measurements, Modeling and Effects on Ecosystems* (pp. 509-530). Springer-Verlag GmbH Berlin Heidelberg, and Tsinghua University Press Beijing, China
- Gao, W., Z. Q. Gao, X. Pan, J. R. Slusser, M. Cao, J. Zhang, Y. Hamid, and Y. Ma. 2006. The impact of precipitation and temperature on net primary productivity (NPP) in Xinjiang from 1981-2000. In J. Qu, W. Gao, M. Kafatos, R. Murphy and V. Salomonson (eds), *Earth Science Satellite Remote Sensing II* (pp. 395-406). Tsinghua

University Press, Beijing and Springer-Verlag GmbH Berlin Heidelberg.

Gao, W. 2003. The applications of RS, GIS, and modeling technology in ecological environment of arid areas. In G. K. Liu (ed.), *On the Frontiers of Science* (pp. 254-276). Tsinghua University Press and Inter press, Beijing, China

#### **Proceedings Article:**

Chen, M., B. H. Newell, Z. Sun, C. A. Corr, and W. Gao. 2019. Reconstruct missing pixels of Landsat land surface temperature product using a CNN with partial convolution. *Proceedings of SPIE, Applications of Machine Learning*, 11139, 111390E. doi: 10.1117/12.2529462

Chen, M., Z. Sun, J. M. Davis, C. Liu, and W. Gao. 2018. Spatial interpolation of surface ozone observations using deep learning. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability XV*. 10767. 107670C-1 - 107670C-15. doi: 10.1117/12.2320755

Chen M., J. M. Davis, C. Liu, Z. Sun, M. Zempila, W. Gao. 2017. Using Deep Recurrent Neural Network for direct beam solar irradiance cloud screening. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability XIV*, 10405, 1040503. doi: 10.1117/12.2273364

Sun, Z., N.B. Chang, W. Gao, M. Chen, and M.M. Zempila. 2017. Using input feature information to improve ultraviolet retrieval in neural networks. In *Remote Sensing and Modeling of Ecosystems for Sustainability XIV* (Vol. 10405, p. 1040506). International Society for Optics and Photonics.

Tao, Z., R. Shi, Y. Zeng, and W. Gao. 2017. Effects of distribution density and cell dimension of 3D vegetation model on canopy NDVI simulation base on DART. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability XIV*, 10405, 1040511. doi: 10.1117/12.2273308

Zempila, M.M., K. Fragkos, J. Davis, Z. Sun, M. Chen, and W. Gao. 2017. Total ozone column retrieval from UV-MFRSR irradiance measurements: evaluation at Mauna Loa station. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability XIV*, 10405, 1040507, doi: 10.1117/12.2274565

Zempila, M.M., J. Davis, G. Janson, B. Olson, M. Chen, B. Durham, S. Simpson, J. Straube, Z. Sun, and W. Gao. 2017. Quality assurance of the UV irradiances of the UV-B Monitoring and Research Program: the Mauna Loa test case. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability XIV*, 10405, 104050A, doi: 10.1117/12.2274525

An, Y., W. Liu, W. Gao, Z. Gao, C. Liu, and R. Shi. 2016. Nonlinear vegetation phenology shifts over the northern china during 1982–2006. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability XIII*, 9975, 99750N. doi: 10.1117/12.2235858

Chen, M., M. Zempila, J. M. Davis, R. W. King, and W. Gao. 2016. In-situ calibration of the water vapor channel for multi-filter rotating shadowband radiometer using collocated GPS, AERONET and meteorology data. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability XIII*, 9975, 99750E. doi:10.1117/12.2236572

Kan, Y., C. Liu, F. Qiao, Y. Liu, W. Gao and Z. Sun. 2016. Effects of microphysics parameterization schemes on the simulation of a heavy rainfall event in Shanghai. 2016. *Proceeding of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability XIII*, 9975, 99750U. doi:10.1117/12.2237281

Kan, Z., C. Liu, F. Qiao, W. Gao, and M. Chen. 2016. Monitoring the changes of water storage over the Huang-huai-hai plain based on the GRACE satellite. *Proceeding of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability XIII*, 9975, 99750G. doi: 10.1117/12.2237333

Liu, P., J. Zhou, R. Shi, C. Zhang, C. Liu, Z. Sun, and W. Gao. 2016. Identification of *Phragmites australis* and *Spartina alterniflora* in the Yangtze Estuary between Bayes and BP neural network using hyperspectral data. *Proceeding of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability XIII*, 9975, 99750H. doi: 10.1117/12.2236772

- Ma, M., R. Shi, K. Bai, C. Liu, W. Gao, and Z. Sun. 2016. Evaluation of the consistency of OMI-TOMS total ozone with collocated ground-based measurements. *Proceeding of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability XIII*, 9975, 99750W. doi: 10.1117/12.2238604
- Sun, Z., J. Davis and W. Gao. 2016. Analysis of ten years of surface UV observations from data fusion for the continental U.S. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability XIII*, 9975, 99750B; doi:10.1117/12.2238058
- Asao, S., Z. Sun, and W. Gao. 2015. Effects of bias in solar radiation inputs on ecosystem model performance. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability XII*, 9610, 96100C. doi: 10.1117/12.2188206
- Chen, M., J. Davis, Z. Sun, and W. Gao. 2015. Two-stage reference channel calibration for collocated UV and VIS Multi-Filter Rotating Shadowband Radiometers. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability XII*, 9610, 96100L. doi: 10.1117/12.2185500
- Sun, Z., J. Davis, and W. Gao. 2015. Combined UV Irradiance from TOMS-OMI satellite and UVMRP ground measurements across the continental US. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability XII*, 9610, 961004. doi: 10.1117/12.2188760
- Wu, Y., X. Liang, W. Gao. 2015. Climate change impacts on the U.S. agricultural economy. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability XII*, 9610, 96100J. doi: 10.1117/12.2192469
- Du, J., C. Liu, and W. Gao. 2014. Assimilation of soil moisture using Ensemble Kalman Filter. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability XI*, 9221, 92210N. doi: 10.1117/12.2058852
- Liu, C., W. Gao, P. Liu, and Z. Sun. 2014. Assimilation of remote sensing data into crop growth model to improve the estimation of regional winter wheat yield. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability XI*, 9221, 922104. doi: 10.1117/12.2058931
- Liu, P., R. Shi, H. Wang, K. Bai, and W. Gao. 2014. Estimating leaf photosynthetic pigments information by stepwise multiple linear regression analysis and a leaf optical model. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability XI*, 9221, 92211A. doi: 10.1117/12.2060530
- Ma, M., R. Shi, P. Liu, H. Wang, and W. Gao. 2014. The impacts of bandwidths on the estimation of leaf chlorophyll concentration using normalized difference vegetation indices. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability XI*, 9221, 922111. doi: 10.1117/12.2061290
- Chen, M., J. Davis, H. Tang, Z. Gao, and W. Gao. 2012. A Multi-Channel Calibration Method for Multi-Filter Rotating Shadow-band Radiometer. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability IX*, 8513, 851305. doi: 10.1117/12.929454
- Bai, K., C. Liu, R. Shi, and W. Gao. 2011. Comparison of aerosol optical depth over northern China derived from ground-based measurements and MODIS. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability VIII*, 8156, 81560I. doi: 10.1117/12.891045
- Chen, Y., R. Shi, C. Liu, Y. Chen, and W. Gao. 2011. The evaluation of the applicability of MODIS AOD product in the lower and middle reaches of Yangtze River. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability VIII*, 8156, 81560K. doi: 10.1117/12.8929367
- Gao, Z., and W. Gao. 2011. Integrating satellite for drought impact assessment in a developed coastal region. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability VIII*, 8156, 81560H. doi: 10.1117/12.890389
- Gao, Z., and W. Gao. 2010. Comparative analysis of UVB exposure between Nimbus 7/TOMS satellite estimates and ground-based measurements. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability VII*, 7809, 78090Q. doi: 10.1117/12.858452
- Liu, C., W. Gao, Z. Gao, and R. Shi. 2009. Atmospheric correction model of Landsat images. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability VI*, 7454, 745412. doi: 10.1117/12.824230

- Bao, Y., W. Gao, and Z. Gao. 2008. Estimating winter wheat biomass based on LANDSAT TM and MODIS data. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability V*, 7083, 70831L. doi: 10.1117/12.806210
- Gao, Z., X. Cao, M. Chen, and W. Gao. 2008. The Comparing Study of Net Primary Production in China. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability V*, 7083, 70830M. doi: 10.1117/12.791581
- Liu, C., W. Gao, Z. Gao, and S. Xu. 2008. Improvements of regional evapotranspiration model by considering topography correction. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability V*, 7083, 70830L. doi: 10.1117/12.791580
- Shi, R., H. Zhang, J. Sun, W. Gao, D. Zhuang, and Z. Niu. 2008. Responses of plant biochemical substances to reflectance spectra at leaf and canopy scales. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability V*, 7083, 70830X. doi: 10.1117/12.794088
- Xie, X., W. Gao, and Z. Gao. 2008. A Method for Estimating the Incident PAR on Inclined Surfaces. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability V*, 7083, 70830P. doi: 10.1117/12.791695
- Xie, X., W. Gao, and Z. Gao. 2008. Estimation of Land Photosynthetically Active Radiation in Clear Sky Using MODIS Atmosphere and Land Products. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability V*, 7083, 70830O. doi: 10.1117/12.791693
- Zou, L., W. Gao, T. Wu, Q. Lu, and Y. Zhang. 2008. Numerical simulation by the Common Land Model (CLM) of the soil moisture over China during the summer of 2006. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability V*, 7083, 708314. doi: 10.1117/12.794448
- Gao, W., Q. Lu, Z. Gao, W. Wu, B. Du, and J. Slusser. 2007. Correlation analysis of snow depth retrieved from SSM/I with precipitation and temperature over China. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability IV*, 6679, 667913. doi: 10.1117/12.727856
- Liu, C., W. Gao, and Z. Gao. 2007. A study of retrieve land surface temperature and evapotranspiration in response to LUCS based on remote sensing data. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability IV*, 6679, 66791F. doi: 10.1117/12.726039
- Lu, Q., W. Gao, Z. Gao, W. Wu, C. Dong, Z. Yang, P. Zhang, B. Du, and J. Slusser. 2007. Construction of land data assimilation system based on EnKF technology and community land model. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability IV*, 6679, 667912. doi: 10.1117/12.727868
- Wang, X., W. Gao, J. Davis, B. Olson, G. Janson, and J. Slusser. 2007. Dependence of erythemally weighted UV radiation on geographical parameters in the United States. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability IV*, 6679, 667903. doi: 10.1117/12.735284
- Zou, L., W. Gao, T. Wu, and X. Xu. 2007. A method to compute solar radiation at surface in any time interval based on NCEP re-analysis. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability IV*, 6679, 66790R. doi: 10.1117/12.730626
- Du, C., W. Wu, X. Liu, and W. Gao. 2006. Simulation of Soil Moisture and Its Variability in East Asia. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability III*, 6298, 62982F. doi: 10.1117/12.690643
- Gao, W., Q. Lu, Z. Gao, W. Wu, B. Du, and J. Slusser. 2006. Analysis of temporal variations of albedo from MODIS. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability III*, 6298, 62981G. doi: 10.1117/12.676197
- Gao, Z., W. Gao, and J. Slusser. 2006. The LUCS Responses to Climatic changes in China in the last 20 years. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability III*, 6298, 629818. doi: 10.1117/12.676236
- Liu, S., W. Gao, X. Liang, H. Zhang, and J. Slusser. 2006. Sensitivity of CWRP simulations of the China 1998 summer flood to cumulus parameterizations. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability III*, 6298, 62981I. doi: 10.1117/12.676216

- Liu, S., W. Gao, X. Liang, H. Zhang, and J. Slusser. 2006. CWRf simulations of the China 1991 and 1998 summer floods. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability III*, 6298, 62981J. doi: 10.1117/12.676218
- Sun, H., Z. Rong, C. Liu, J. Liu, Y. Zhang, P. Zhang, X. Wang, and W. Gao. 2006. Infrared spectrum characteristics of the forest fire from field experiments. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability III*, 6298, 629806. doi: 10.1117/12.679775
- Wang, X., W. Gao, K. R. Reddy, J. Slusser, and M. Xu. 2006. Preliminary results of a UV-B effect incorporated GOSSYM Model. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability III*, 6298, 62980O. doi: 10.1117/12.681446
- Wang, X., W. Gao, J. R. Slusser, J. Davis, Z. Gao, G. Scott, B. Olson, N. Krotkov, M. Xu, and X. Liang. 2006. Spectral distribution of UV-B irradiance derived by synthetic model compared with simulation results of TUV and ground measurements. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability III*, 6298, 62980L. doi: 10.1117/12.681464
- Xu, M., X. Liang, W. Gao, J. Slusser, and K. Kunkel. 2006. Validation of the TUV module in CWRf using USDA-UVB network observations. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability III*, 6298, 62980N. doi: 10.1117/12.680122
- Zou, L., W. Gao, T. Wu, X. Xu, B. Du, and J. Slusser. 2006. A 3DVAR land data assimilation scheme: Part 1, mathematical design. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability III*, 6298, 62982E. doi: 10.1117/12.679994
- Zou, L., W. Gao, T. Wu, X. Xu, B. Du, and J. Slusser. 2006. A 3DVAR land data assimilation scheme: Part 2, test with ECMWF ERA-40. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability III*, 6298, 62981M. doi: 10.1117/12.679991
- Apostol, K. G., R. H. Grant, C. I. Bawhey, and W. Gao. 2005. Short-term impacts of elevated UV-B radiation on soybeans. *Proceedings of SPIE, Ultraviolet Ground- and Space-based Measurements, Models, and Effects V*, 5886, 58860I. doi: 10.1117/12.613320
- Beneski, E., J. H. Bassman, J. R. Slusser, and W. Gao. 2005. Application of CCD array digital fiber optic spectrometers in determination of within-tree and within-canopy irradiances of UV-B radiation. *Proceedings of SPIE, Ultraviolet Ground- and Space-based Measurements, Models, and Effects V*, 5886, 58860X. doi: 10.1117/12.620659
- Britz, S., C. Caldwell, R. Mirecki, J. Slusser, and W. Gao. 2005. Effect of supplemental ultraviolet radiation on the concentration of phytonutrients in green and red leaf lettuce (*Lactuca sativa*) cultivars. *Proceedings of SPIE, Ultraviolet Ground- and Space-based Measurements, Models, and Effects V*, 5886, 58860W. doi: 10.1117/12.625576
- Gao, W., Z. Gao, H. I. Choi, M. Xu and J. R. Slusser. 2005. Construction of surface boundary conditions for regional climate modeling in China by using the remote sensing data. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability II*, 5884, 5884013. doi: 10.1117/12.620149
- Gao, W., Y. Zheng, J. R. Slusser, and R. H. Grant. 2005. Effect of enhanced UV-B radiation combined with other climate stressors on winter wheat. *Proceedings of SPIE, Ultraviolet Ground- and Space-based Measurements, Models, and Effects IV*, 5545, 111-116. doi: 10.1117/12.563465
- Gao, Z., W. Gao, and J. Slusser. 2005. The response of leaf area index to climate change during 1981-2000 in China. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability II*, 5884, 58840S. doi: 10.1117/12.612929
- Guo, X., W. Gao, and J. Wilmshurst. 2005. Measuring grassland structure for recovery of grassland species at risk. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability II*, 5884, 58840B. doi: 10.1117/12.613198

- Liu, S., W. Gao, Z. Gao, H. Zhang, and B. Du. 2005. Numerical simulation of summer 2003 climate in China region using RegCM3. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability II*, 5884, 58840V. doi: 10.1117/12.612988
- Lu, Q., W. Gao, Z. Gao, W. Wu, X. Pan, D. Wang, B. Du and J. R. Slusser. 2005. Simulations of rainfall process in Southeastern China with WRF and MM5. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability II*, 5884, 58840T. doi: 10.1117/12.612982
- Lu, Q., W. Gao, Z. Gao, W. Wu, X. Pan, B. Du, and J. R. Slusser. 2005. An analysis of seasonal and interannual variability of LAI during 1982 to 2004. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability II*, 5884, 58840U. doi: 10.1117/12.612983
- Reddy, K. R., S. Koti, V. G. Kakani, D. Zhao, and W. Gao. 2005. Genotypic variation of soybean and cotton crops in their response to UV-B radiation for vegetative growth and physiology. *Proceedings of SPIE, Ultraviolet Ground- and Space-based Measurements, Models, and Effects V*, 5886, 58860K. doi: 10.1117/12.619899
- Sullivan, J. H., C. Xu, W. Gao, and J. R. Slusser. 2005. Development of UV-B screening compounds in response to variation in ambient levels of UV-B radiation. *Proceedings of SPIE, Ultraviolet Ground- and Space-based Measurements, Models, and Effects V*, 5886, 58860L. doi: 10.1117/12.623738
- Xu, M., X. Liang, W. Gao, K. R. Reddy, J. R. Slusser, and K. Kunkel. 2005. Preliminary results of the coupled CWRP-GOSSYM system. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability II*, 5884, 588409. doi: 10.1117/12.621017
- Zheng, Y., W. Gao, J. R. Slusser, R. H. Grant, and C. Wang. 2005. Responses of different crop growth and yield to enhanced UV-B radiation under field conditions. *Proceedings of SPIE, Ultraviolet Ground- and Space-based Measurements, Models, and Effects IV*, 5545, 102-110. doi: 10.1117/12.563454
- Gao, W., Z. Gao, X. Pan, J. Slusser, J. Qi, X. Zhan, and Y. Ma. 2004. Impacts of seasonal climate on net primary productivity (NPP) in Xinjiang, 1981-2000. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability*, 543-552. doi: 10.1117/12.563611
- Gao, W., Y. Zheng, J. Slusser, and R. H. Grant. 2004. Effect of enhanced UV-B radiation combined with other climate stressors on winter wheat. *Proceedings of SPIE, Ultraviolet Ground- and Space-based Measurements, Models, and Effects IV*, 5545, 111-116. doi: 10.1117/12.563465
- Grant, R. H., G. M. Heisler, and W. Gao. 2004. Impact of cloud cover on erythemal UV- B exposure under vegetation canopies. *Proceedings of SPIE, Ultraviolet Ground- and Space-based Measurements, Models, and Effects IV*, 5545, 71-80. doi: 10.1117/12.562501
- Guo, X., W. Gao, P. Richard, Y. Lu, Y. Zheng, and E. Pietroniro. 2004. Canadian prairie drought assessment through MODIS vegetation indices. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability*, 5544, 149-158. doi: 10.1117/12.559581
- Liang, X., M. Xu, W. Gao, K. Kunkel, J. Slusser, Y. Dai, and Q. Min. 2004. New land surface albedo parameterization based on MODIS data: preliminary result. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability*, 55-60. doi: 10.1117/12.563449
- Yang, Q., J. Lei, W. Wei, J. Zhao, and W. Gao. 2004. Study on the effects of artificial oases to the climate change trend. *Proceedings of SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability*, 5544, 455-465. doi: 10.1117/12.559446
- Zheng, Y., W. Gao, J. Slusser, R. H. Grant, and C. Wang. 2004. Response of different crop growth and yield to enhanced UV-B radiation under field conditions. *Proceedings of SPIE, Ultraviolet Ground- and Space-based Measurements, Models, and Effects IV*, 5545, 102-110. doi: 10.1117/12.563454
- Gao, W., Y. Zheng, J. R. Slusser, Y. He, and R. H. Zhang. 2003. Impact of enhanced Ultraviolet-B irradiance on maize yield formation and structure: A field evaluation. *Proceedings of SPIE, Ultraviolet Ground- and Space-based Measurements, Models, and Effects III*, 5156, 396-402. doi: 10.1117/12.509422

- Gao, Z., W. Gao, J. R. Slusser, X. Pan, and Y. Ma. 2003. The sensitivity of NPP to climate controls in northern China estimated by CLM model coupled with RS and GIS technology. *Proceedings of SPIE, Ecosystems Dynamics, Ecosystem-Society Interactions, and Remote Sensing Applications for Semi-Arid and Arid Land*, 4890, 299-305. doi: 10.1117/12.465503
- Heisler, G. M., R. H. Grant, D. J. Nowak, W. Gao, D. E. Crane, and J. T. Walton. 2003. Inclusion of an Ultraviolet Radiation transfer component in an urban forest effects model for prediction tree influences in potential below- canopy exposure to UVB radiation. *Proceedings of SPIE, Ultraviolet Ground- and Space-based Measurements, Models, and Effects III*, 5156, 228-235. doi: 10.1117/12.509193
- Qi, J., C. Wang, Y. Inoue, R. Zhang, and W. Gao. 2003. Synergy of optical and radar remote sensing in agricultural applications. *Proceedings of SPIE, Ecosystems' Dynamics, Agricultural Remote Sensing and Modeling, and Site-Specific Agriculture*, 5153, 153-158. doi: 10.1117/12.514562
- Reddy, K. R., S. Koti, D. Zhao, V. G. Kakani, and W. Gao. 2003. Interactive effects of atmospheric carbon dioxide and ultraviolet-B radiation on cotton growth and physiology. *Proceedings of SPIE, Ultraviolet Ground- and Space-based Measurements, Models, and Effects III*, 5156, 262-272. doi: 10.1117/12.510531
- Slusser, J. R., D. Bigelow, W. Gao, G. R. Scott, and B. Olson. 2003. Comparison of UV synthetic spectra with broadband and spectral irradiances. *Proceedings of SPIE, Ultraviolet Ground- and Space-based Measurements, Models, and Effects III*, 5156, 403-408. doi: 10.1117/12.511736
- Zhan, X., W. Gao, J. Qi, P. R. Houser, J. R. Slusser, X. Pan, Z. Gao, and Y. Ma. 2003. Remote sensing and modeling the dynamics of soil moisture and vegetative cover of arid and semiarid areas. *Proceedings of SPIE, Ecosystems' Dynamics, Agricultural Remote Sensing and Modeling, and Site-Specific Agriculture*, 5153, 51-60. doi: 10.1117/12.505670
- Zheng, Y., W. Gao, C. Wang, W. Xiao, and R. Zhang. 2003. Effect of increased UV-B on weeds and big worms in farmland ecological system. *Proceedings of SPIE, Ultraviolet Ground- and Space-based Measurements, Models, and Effects III*, 5156, 273-280. doi: 10.1117/12.509662
- Gao, W., Z. Gao, J. R. Slusser, X. Pan, and Y. Ma. 2002. The responses of net primary production (NPP) to different climate scenarios with Biome-BGC model in oasis areas along the Tianshan Mountains in Xinjiang, China. *Proceedings of SPIE, Ecosystems Dynamics, Ecosystem-Society Interactions, and Remote Sensing Applications for Semi-Arid and Arid Land*, 4890, 141-150. doi: 10.1117/12.466876
- Gao, W., Y. Zheng, J. R. Slusser, G. M. Heisler, D. He., and J. Xu. 2002. Impact of enhanced ultraviolet-B irradiance on maize yield and its seed qualities: A field evaluation. *Proceedings of SPIE, Ultraviolet Ground- and Space-based Measurements, Models, and Effects II*, 4896, 159-164. doi: 10.1117/12.466201
- Heisler, G. M., R. H. Grant, W. Gao, J. R. Slusser, and C. Ehrlich. 2002. Solar ultraviolet-B radiation in urban environments: Baltimore , Maryland . *Proceedings of SPIE, Ultraviolet Ground- and Space-based Measurements, Models, and Effects II*, 4896, 62-69. doi: 10.1117/12.466229
- Liang, X., W. Gao, K. Kunkel, J. R. Slusser, X. Pan, H. Liu, and Y. Ma. 2002. Sustainability of vegetation over Northwest China:I. Climate Response to Grassland. *Proceedings of SPIE, Ecosystems Dynamics, Ecosystem-Society Interactions, and Remote Sensing Applications for Semi-Arid and Arid Land*, 4890, 29-44. doi: 10.1117/12.466845
- Qi, Y., S. Bai, W. Gao, and G. M. Heisler. 2002. Intra- and inter-specific comparisons of leaf UV-B absorbing-compound concentration of southern broadleaf tree in the United States . *Proceedings of SPIE, Ultraviolet Ground- and Space-based Measurements, Models, and Effects II*, 4896, 120-129. doi: 10.1117/12.466231
- Slusser, J. R., N. A. Krotkov, W. Gao, J. R. Herman, G. Labow, and G. Scott. 2002. Comparisons of USDA UV shadow-band Irradiance Measurements with TOMS Satellite and DISORT Model Retrievals Under All Sky conditions. *Proceedings of SPIE, Ultraviolet Ground- and Space-based Measurements, Models, and Effects*, 4482, 56-63. doi: 10.1117/12.452954



- Sullivan, J. H., D. C. Gitz, A. E. Stapleton, W. Gao, and J. R. Slusser. 2002. Short-term responses of barley to changes in ambient levels of UV-B radiation and their role in UV protection. *Proceedings of SPIE, Ultraviolet Ground- and Space-based Measurements, Models, and Effects II*, 4896, 135-143. doi: 10.1117/12.466182
- Wang, C., Y. Zheng, W. Gao, J. R. Slusser, and D. He. 2002. Responses of winter wheat growth and production under subambient UV-B irradiance. *Proceedings of SPIE, Ultraviolet Ground- and Space-based Measurements, Models, and Effects II*, 4896, 219-222. doi: 10.1117/12.466172
- Ye, Q., M. H. Glantz, X. Pan, W. Gao, and Y. Ma. 2002. Desert Affairs Program: An initiative on integrating research education and application for sustainable development in arid and semi-arid lands. *Proceedings of SPIE, Ecosystems Dynamics, Ecosystem-Society Interactions, and Remote Sensing Applications for Semi-Arid and Arid Land*, 4890, 230- 236. doi: 10.1117/12.465957
- Zhan, X., W. Gao, X. Pan, and Y. Ma. 2002. Monitoring the hydrologic and vegetation dynamics of arid land with satellite remote sensing, and mathematic modeling. *Proceedings of SPIE, Ecosystems Dynamics, Ecosystem-Society Interactions, and Remote Sensing Applications for Semi-Arid and Arid Land*, 4890, 115-127. doi: 10.1117/12.466604
- Zheng, Y., W. Gao, J. R. Slusser, Y. He, and R. H. Grant. 2002. Growth analytic simulation of soybean and winter wheat crops under different doses of UV-B irradiance. *Proceedings of SPIE, Ultraviolet Ground- and Space-based Measurements, Models, and Effects II*, 4896, 130-134. doi: 10.1117/12.466190
- Gao, W., R. H. Grant, G. M. Heisler, and J. R. Slusser. 2001. Modeling ultraviolet-B radiation in a maize canopy. *Proceedings of SPIE, Ultraviolet Ground- and Space-based Measurements, Models, and Effects*, 4482, 395-407. doi: 10.1117/12.452943
- Gao, W., J. R. Slusser, L. C. Harrison, P. Disterhoft, Q. Min, B. Olson, K. Lantz, and B. Davis. 2001. Comparisons of UV Synthetic Spectra Retrieved from the USDA UV Multifilter Rotating Shadowband Radiometer with Collocated USDA Reference UV Spectroradiometer and NIWA UV Spectroradiometer. *Proceedings of SPIE, Ultraviolet Ground- and Space-based Measurements, Models, and Effects*, 4482, 408-414. doi: 10.1117/12.452944
- Gao, W., Y. Zheng, J. R. Slusser, and G. M. Heisler. 2001. Impact of enhanced ultraviolet-B irradiance on cotton yield and qualities. *Proceedings of SPIE, Ultraviolet Ground- and Space-based Measurements, Models, and Effects*, 4482, 381-387. doi: 10.1117/12.452941
- Grant, R. H., and W. Gao. 2001. Estimating the UV diffuse fraction of solar radiation under partly cloudy skies. *Proceedings of SPIE, Ultraviolet Ground- and Space-based Measurements, Models, and Effects*, 4482, 160-168. doi: 10.1117/12.452914
- Heisler, G. M., R. H. Grant, and W. Gao. 2001. Urban tree influences on ultraviolet irradiance. *Proceedings of SPIE, Ultraviolet Ground- and Space-based Measurements, Models, and Effects*, 4482, 277-290. doi: 10.1117/12.452929
- Slusser, J. R., N. Krotkov, W. Gao, J. R. Herman, G. Labow, and G. Scott. 2001. Comparisons of USDA UV shadowband irradiance measurements with TOMS satellite and DISORT model retrievals under all sky conditions. *Proceedings of SPIE, Ultraviolet Ground- and Space-based Measurements, Models, and Effects*, 4482, 56-63. doi: 10.1117/12.452954
- Zheng, Y., W. Gao, and G. Shi. 2001. Calculating Solar Ultraviolet Radiation by Computational Models in Nanjing Region. *Proceedings of SPIE, Ultraviolet Ground- and Space-based Measurements, Models, and Effects*, 4482, 455-459. doi: 10.1117/12.452951
- Zheng, Y., W. Gao, J. R. Slusser, R. H. Grant, and C. Wang. 2001. Yield and yield formation of winter wheat in response to enhanced solar ultraviolet-B radiation. *Proceedings of SPIE, Ultraviolet Ground- and Space-based Measurements, Models, and Effects*, 4482, 335-340. doi: 10.1117/12.452936

#### **PAPERS PRESENTED/SYMPOSIA/INVITED LECTURES/PROFESSIONAL MEETINGS/WORKSHOPS**

2 November 2017, Multi-disciplinary Approaches to Urban Water and Environmental Sustainability Symposium, The environmental simulation research progress report of ECNU-CSU Joint Research Institute for New Energy and the Environment. Shanghai, China

1–4 September 2017, International Congress of Biometeorology, Simulation of long-term solar UV effects on surface plant litter decomposition, Durham, UK

6–10 August 2017, The Conference of Remote Sensing and Modeling of Ecosystems for Sustainability XIV, as Part of International Symposium on Optical Science and Technology, SPIE Annual Meeting, Editor, San Diego, California

10 March 2017, Environmental Data Collection, Analysis, and Assimilation, The introduction of UVMRP and its data application. Shanghai, China

27 October 2016, The Global Social, Ecological and Hydrological Importance Symposium, Uncertainty in Water Resources and Environmental Sustainability, Southwest University, Chongqing, China

28–31 August 2016, The Conference of Remote Sensing and Modeling of Ecosystems for Sustainability XIII, as Part of International Symposium on Optical Science and Technology, SPIE Annual Meeting, Editor, San Diego, California

23 March 2016, AGU/CSU Hydrology Days, Water and Environmental Sustainability Across the Globe, Challenges and Opportunities, Colorado State University, Fort Collins, CO

10-11 October 2015, From data to applications in earth science for sustainability, Shanghai Normal University, Shanghai, China

9-13 August 2015, The Conference of Remote Sensing and Modeling of Ecosystems for Sustainability XII, as Part of International Symposium on Optical Science and Technology, SPIE Annual Meeting, Editor, Chair, San Diego, California

3-5 May 2015, ASABE (American Society of Agricultural and Biological Engineers) 1st Climate Change Symposium– Adaptation and Mitigation, Chicago, IL

13-18 February 2015, SPIE Photonics West Conference, San Francisco, CA

22-24 February 2015, America View-ColoradoView: HIA-Using Remote Sensing Data in Invasive Species Modeling and Prediction; HIA-Using Remote Sensing Data to Map UV-B Radiation Over the USA, Washington DC

11 November 2014, Joint Research Institute for Science and Society (JORISS) Conference, The Societal Dimension of Science, ECNU, Zhong Bei Campus, Chaired, Environmental Protection: The Air Pollution Crisis, Session 5, Shanghai, China

18–20 August 2014, The Conference of Remote Sensing and Modeling of Ecosystems for Sustainability XI, as Part of International Symposium on Optical Science and Technology, SPIE Annual Meeting, Editor, San Diego, California

26-29 May 2014, Dragon3 Symposium, Derivation of ground settlement spatiotemporal characteristics of reclaimed area in Nanhui New City, Shanghai, China, from time-series InSAR interpretation, Shanghai, China

26–29 August 2013, The Conference of Remote Sensing and Modeling of Ecosystems for Sustainability X, as Part of International Symposium on Optical Science and Technology, SPIE Annual Meeting, Editor, San Diego, California

12–16 August 2012, The Conference of Remote Sensing and Modeling of Ecosystems for Sustainability IV, as Part of International Symposium on Optical Science and Technology, SPIE Annual Meeting, Leading Chair, San Diego, California

5–8 September 2012, Agricultural Model Intercomparison and Improvement Project (AgMIP) Meeting, presented work on physical modeling of US cotton yields and climate stresses during 1979-2005, discussed interactions between crop, climate, and economic models. New York City, New York

16–18 December 2012, The 7th Global Confucius Institute Conference, Director’s Meeting, Beijing, China

22–23 August 2011, The Conference of Remote Sensing and Modeling of Ecosystems for Sustainability VIII, as Part of International Symposium on Optical Science and Technology, SPIE’s Annual Meeting, Leading Chair, San Diego, California

8–10 September 2010, Session of Climate Change Challenges for the U.S. and China, International Colloquium on China, Co-chair, Fort Collins, Colorado

1–5 August 2010, The International Conference of Remote Sensing and Modeling of Ecosystems for Sustainability VII, as Part of International Symposium on Optical Science and Technology, SPIE's Annual Meeting, Leading Chair, San Diego, California

2–6 August 2009, The Conference of Remote Sensing and Modeling of Ecosystems for Sustainability VI, as Part of International Symposium on Optical Science and Technology, SPIE's Annual Meeting, Leading Chair, San Diego, California

2–6 August 2009, Ultraviolet and Visible Ground- and Space-based Measurements, Trace Gases, Aerosols and Effects VI, as Part of International Symposium on Optical Science and Technology, SPIE's Annual Meeting, Co-Chair, San Diego, California

9–16 August 2008, The Conference of Remote Sensing, Modeling, and Ecosystems for Sustainability V, as Part of International Symposium on Optical Science and Technology, SPIE's Annual Meeting, Leading Chair, San Diego, California

17–19 September 2007, The Conference of Remote Sensing of Clouds and the Atmosphere XII, as Part of SPIE Europe Remote Sensing, Program Committee Member, Florence, Italy

26–30 August 2007, The Conference of Remote Sensing and Modeling of Ecosystems for Sustainability IV, as Part of International Symposium on Optical Science and Technology, SPIE's Annual Meeting, Leading Chair, San Diego, California

26–30 August 2007, The Conference of Atmospheric and Environmental Remote Sensing Data Processing and Utilization: Readiness for GEOSS, Program Committee Member, San Diego, California

11–14 September 2006, The Conference of Remote Sensing of Clouds and the Atmosphere XI, as Part of SPIE Europe Remote Sensing, Program Committee Member, Stockholm, Sweden

13–17 August 2006, The Conference of Remote Sensing and Modeling of Ecosystems for Sustainability III, as Part of International Symposium on Optical Science and Technology, SPIE's Annual Meeting, Leading Chair, San Diego, California

19–22 September 2005, The Conference of Remote Sensing of Clouds and the Atmosphere X, as Part of 12<sup>th</sup> International symposium of Remote Sensing, SPIE Europe, Program Committee Member, Bruges, Belgium

31 July–2 August 2005, The Conference of Remote Sensing and Modeling of Ecosystems for Sustainability II, as Part of International Symposium on Optical Science and Technology, SPIE's 50<sup>th</sup> Annual Meeting, Leading Chair, San Diego, California

3–4 August 2005, The Conference of Ultraviolet Ground- and Space-based Measurements, Models, and Effects V, as Part of International Symposium on Optical Science and Technology, SPIE's 50<sup>th</sup> Annual Meeting, Co-Chair, San Diego, California

31 July–4 August 2005, The Conference of Atmospheric and Environmental Remote Sensing Data Processing and Utilization: Numerical Atmospheric Prediction and Environmental Monitoring, as Part of International Symposium on Optical Science and Technology, SPIE's 50<sup>th</sup> Annual Meeting, Program Committee Member, San Diego, California

19–24 May 2005, International Symposium of Remote Sensing and Space Technology for Multi-disciplinary Research and Application, Secretary-General, Beijing, China

8–12 September 2004, International Conference on Resources, Ecosystems, and Sustainability of Arid and Semi-arid Regions, Executive Chair, Urumqi, China

2–3 August 2004, The Conference of Remote Sensing and Modeling of Ecosystems for Sustainability, as Part of International Symposium on Optical Science and Technology, SPIE's 49<sup>th</sup> Annual Meeting, Leading Chair, Denver, Colorado

4–6 August 2004, The Conference of Ultraviolet Ground- and Space-based Measurements, Models, and Effects IV, as Part of International Symposium on Optical Science and Technology, SPIE's 49<sup>th</sup> Annual Meeting, Co-Chair, Denver, Colorado

2–6 August 2004, The Conference of Atmospheric and Environmental Remote Sensing Data Processing and Utilization: an End-to-End System Perspective, as Part of International Symposium on Optical Science and Technology, SPIE's 49<sup>th</sup> Annual Meeting, Program Committee Member, Denver, Colorado

6–12 June, 2004, The NIM and SeaSpace International Remote Sensing Symposium and the 14<sup>th</sup> Annual International TeraScan Conference, Symposium Chair and Secretary-General, Nanjing, China

3–8 August 2003, The Conference of Ultraviolet Ground- and Space-based Measurements, Models, and Effects III, as Part of International Symposium on Optical Science and Technology, SPIE's 48<sup>th</sup> Annual Meeting, Co-Chair, San Diego, California

3–8 August 2003, The Conference of Ecosystems Dynamics, Agricultural Remote Sensing and Modeling, and Site-Specific Agriculture, as Part of International Symposium on Optical Science and Technology, SPIE's 48<sup>th</sup> Annual Meeting, Leading Chair, San Diego, California

23–27 October 2002, The Third International Asia-Pacific Environmental Remote Sensing Symposium 2002, Remote Sensing of the Atmosphere, Ocean, Environment, and Space, Secretary-General, Hangzhou, China

June 2002, The Third Front Range UV and Ozone Workshop, Co-Chair, Boulder, Colorado

23–27 October 2002, The Conference of Ultraviolet Ground- and Space-based Measurements, Models, and Effects II, as Part of the Third International Asia-Pacific Environmental Remote Sensing Symposium 2002, Remote Sensing of the Atmosphere, Ocean, Environment, and Space, Leading Chair, Hangzhou, China

23–27 October 2002, The Conference of Atmospheric and Oceanic Processes, Dynamics, and Climate Change, as Part of the Third International Asia-Pacific Environmental Remote Sensing Symposium 2002, Remote Sensing of the Atmosphere, Ocean, Environment, and Space, Program Committee Member, Hangzhou, China

23–27 October 2002, The Conference of Ecosystems Dynamics, Ecosystem-Society Interactions, and Remote Sensing Applications for Semi-Arid and Arid Land, as Part of the Third International Asia-Pacific Environmental Remote Sensing Symposium 2002, Remote Sensing of the Atmosphere, Ocean, Environment, and Space, Program Committee Member, Hangzhou, China

29 July–3 August 2001, The Conference of Ultraviolet Ground- and Space-based Measurements, Models, and Effects I, as Part of International Symposium on Optical Science and Technology, SPIE's 46<sup>th</sup> Annual Meeting, Co-Chair, San Diego, California

11 July 2012, Global change researches using multi-source observations and modeling of the earth system, Guizhou University, Presenter, Guiyang, China

30 October 2011, Scientific Data and Earth Science—with Application examples, International Council for Science, The Committee on Data for Science and Technology, Presenter, China Academy of Sciences, Beijing, China

21 March 2011, Assimilation of observations, functional models and remote sensing technology to study environment, climate and ecosystem interactions, Satellite Environment Center, Ministry of Environmental Protection, Presenter, Beijing, China

5–9 December 2011, Biogeodynamics and Earth System Sciences, AGU Fall Meeting, Regional Climatic Effects of Crop Growth Modeled by Coupled CWRP-CROP System, American Geophysical Union, Presenter, San Francisco, CA

23–28 January 2010, Ultraviolet ground and space-based measurements, numerical modeling/simulation and radiation effects research, SPIE Photonics West, Presenter, San Francisco, CA

28 February–2 March 2010, U.S. Department of Agriculture UV-B Monitoring and Research Program and Integrated Crop Modeling Activity, AmericaView Consortium, Winter Business Meeting, Presenter, Washington DC

3 March 2010, Ultraviolet ground and space-based measurements, numerical modeling/simulation and radiation effects research – current and future UVMRP planning, USDA National Institute of Food and Agriculture (NIFA) Officials and National Program Leader, Presenter, Washington DC

19–20 May 2010, Regional Interaction of Climate and Ecosystem Coupling Regional Climate Model with Crop Models to Assess the Future Climate Change on Agriculture, International Conference on Satellite Remote Sensing and Eco-Environmental Modeling, Presenter, Shanghai, China

21 May 2010, Assimilation of Ground Observations and Functional Models to Study Climate-Crop Interactions, Annual Meeting of the Geographical Society of China, Presenter, Shanghai, China

8–10 September 2010, , Research outcomes on climate change effects on agriculture crops, International Colloquium on China, Presenter, Fort Collins, Colorado

28–30 October 2010, Development of the UVMRP Integrated Climate Crop Modeling Assessment System, Agricultural Model Intercomparison and Improvement Project (AgMIP) Workshop, Presenter, Long Beach, CA

9–11 November 2010, Progress report on Coupling the Regional Climate Model with Cotton and Corn Crop Models, Mitigation, Adaptation, and Integration for Climate Change Science and Agriculture, USDA Agricultural Research Service, Presenter, San Diego, California

23–26 August 2009, The Introduction of USDA UV-B Monitoring and Research Program and Integrated Crop Modeling Activity, in Farming System Design 2009 Symposium, Presenter, Monterey, CA

14–16 December 2009, The preliminary research results of implementation of DSSAT CERES-Maize Model into CWRP and preliminary standalone evaluation, AGU Fall meeting, Co-presenter with Xu, M., X. Z. Liang, San Francisco, CA

13 March 2008, Assimilation of Observations, Functional Models, and GIS to Study Climate Ecosystem Interactions, Chinese Academy of Sciences, Presenter, Beijing, China

17–20 March 2008, USDA UV-B Monitoring and Research Program: Enhancement of Network Data Products, Research Support, and National Research Collaboration, Western Association of Agricultural Experiment Station Directors (WAAESD) Spring Meeting, Co-presenter with G. Janson, Sioux Falls, SD

8 September 2007, Recent advances in U.S. hyper spectral infrared remote sensing, 16<sup>th</sup> China National Remote Sensing Symposium, Co-presenter with Huang, B.M., A. Huang, Beijing, China

13–16 August 2012, Atmospheric correction of EO-1 Hyperion data using multifilter rotating shadowband radiometer (MFRSR), Remote Sensing and Modeling of Ecosystems for Sustainability IX, Co-presenter with M. Chen, J. Davis, H. Tang, Z. Gao, San Diego, CA, USA

11 July 2012, Global change researches using multi-source observations and modeling of the earth system, Guizhou University, Presenter, Guiyang, China

30 October 2011, Scientific Data and Earth Science—with Application examples. International Council for Science, The Committee on Data for Science and Technology, Presenter, China Academy of Sciences, Beijing, China

22–23 August 2011, Integrating satellite for drought impact assessment in a developed coastal region. Remote Sensing and Modeling of Ecosystems for Sustainability VIII, Co-presenter with Z. Gao, San Diego, CA, USA

21 March 2011, Assimilation of observations, functional models and remote sensing technology to study environment, climate and ecosystem interactions, Satellite Environment Center, Ministry of Environmental Protection, Presenter, Beijing, China

12 August 2010, Comparative analysis of UVB exposure between Nimbus 7/TOMS satellite estimates and ground-based measurements. Remote Sensing and Modeling of Ecosystems for Sustainability VII, Co-presenter with Z. Gao, San Diego, CA, USA

29 March 2007, Assimilation of satellite and ground observation, numerical and ecological models, and GIS to assess ecosystems. Presenter, East China Normal University, Shanghai, China

12 July 2006, Ecosystems assessment by using retrieved remote sensing data, regional climate model and DSSAT/GOSSYM models. Presenter, Anhui Meteorological Bureau, Hefei, China

28 June 2006, Study of climate-ecosystems interactions by using remote sensing, modeling and data assimilation, Presenter, Hubei Meteorological Bureau, Wuhan, China

19–21 April 2006, The USDA UV-B Monitoring and Research Program Research and Products, Co-presented with J.R. Slusser, Dunedin, New Zealand

21–24 May 2006, The penetration of diffuse UV radiation into a maize canopy, The 17<sup>th</sup> Conference of Biometeorology and Aerobiology, American Meteorological Soc., Co-presented with R.H., Grant, San Diego, California

31 July–4 August 2005, Application of CCD array digital fiber optic spectrometers in determination of within-tree and within-canopy irradiances of UV-B radiation. Ultraviolet Ground-band Space-based Measurements, Models, and Effects V, The International Symposium on Optical Science and Technology, SPIE's 50<sup>th</sup> Annual Meeting, Co-presenter with Beneski, E., J. H. Bassman, J. R. Slusser, San Diego Convention Center, San Diego, California

31 July–4 August 2005, Development of UV-B screening compounds in response to variation in ambient levels of UV-B radiation. Ultraviolet Ground-band Space-based Measurements, Models, and Effects V, The International Symposium on Optical Science and Technology, SPIE's 50<sup>th</sup> Annual Meeting, Co-presenter with J. H. Sullivan, C. Xu, J. R. Slusser, San Diego Convention Center, San Diego, California

31 July–4 August 2005, Genotypic variation of soybean and cotton crops in their response to UV-B radiation for vegetative growth and physiology. Ultraviolet Ground-band Space-based Measurements, Models, and Effects V, The International Symposium on Optical Science and Technology, SPIE's 50<sup>th</sup> Annual Meeting, Co-presenter with K.R. Reddy, S. Koti, V.G. Kakani, D. Zhao, San Diego Convention Center, San Diego, California

31 July–4 August 2005, Short-term impacts of elevated UV-B radiation on soybeans, Ultraviolet Ground-band Space-based Measurements, Models, and Effects V, The International Symposium on Optical Science and Technology, SPIE's 50<sup>th</sup> Annual Meeting, Co-presenter with Grant, R.H., K. G. Apostol, C. I. Bawhey, San Diego Convention Center, San Diego, California

31 July–4 August 2005, Construction of surface boundary conditions for regional climate modeling in China by using the remote sensing data. Remote Sensing and Modeling of Ecosystems for Sustainability II, The International Symposium on Optical Science and Technology, SPIE's 50<sup>th</sup> Annual Meeting, Co-presenter with Z. Gao, H.I. Choi, M. Xu and J.R. Slusser, San Diego Convention Center, San Diego, California

31 July–4 August 2005, Preliminary result of the CWRP-GOSSYM coupling system, Remote Sensing and Modeling of Ecosystems for Sustainability II, The International Symposium on Optical Science and Technology, SPIE's 50<sup>th</sup> Annual Meeting, Co-presenter with Liang, X.Z., M. Xu, K.R. Reddy, J.R. Slusser, San Diego Convention Center, San Diego, California

31 July–4 August 2005, Modeling grassland structure for recovery of grassland species at risk. Remote Sensing and Modeling of Ecosystems for Sustainability II, The International Symposium on Optical Science and Technology, SPIE's 50<sup>th</sup> Annual Meeting, Co-presenter with X.L. Guo, J. Wilmshurst, San Diego Convention Center, San Diego, California

31 July–4 August 2005, Numerical simulation of summer 2003 climate in China region using RegCM3, Remote Sensing and Modeling of Ecosystems for Sustainability II, The International Symposium on Optical Science and Technology, SPIE's 50<sup>th</sup> Annual Meeting, Co-presenter with S.Y.Liu, Z. Gao, H. Zhang, B.Y. Du, San Diego Convention Center, San Diego, California

31 July–4 August 2005, The response of leaf area index to climate change during 1981-2000 in China, Remote Sensing and Modeling of Ecosystems for Sustainability II, The International Symposium on Optical Science and Technology, SPIE's 50<sup>th</sup> Annual Meeting, Co-presenter with Gao, Z., J.R. Slusser, San Diego Convention Center, San Diego, California

31 July–4 August 2005, An analysis of seasonal and inter annual variability of LAI during 1982 to 2004, Remote Sensing and Modeling of Ecosystems for Sustainability II, The International Symposium on Optical Science and Technology, SPIE's 50<sup>th</sup> Annual Meeting, Co-presenter with Q.F. Lu, Z. Gao, W.L. Wu, X.L. Pan, B.Y. Du, J.R. Slusser, San Diego Convention Center, San Diego, California

23 May 2005, Evaluate climate impact on ecosystems by using the method of remote sensing, climate model and ecosystems model coupling, presenter, Peking University, Beijing, China

16 December 2004, Assimilation of Observations, Functional Models, and GIS to Study Climate-Ecosystem Interactions, Bio-Environmental Complexity + Computational Sciences = High Performance Computing Colloquium, Presenter, Washington, DC, USA

8–11 November 2004, AIRS single field of view cloud Detection and cloud property retrieval, SPIE Fourth international Asia-Pacific Environmental Remote Sensing Symposium on Remote Sensing of the atmosphere, ocean, environment and space: Passive Optical Remote Sensing of the Atmosphere and Clouds IV. Co-presenter with G. Li, H.L.A. Huang, J. Li, Honolulu, Hawaii, USA

23–27 August 2004, The Biologically-effective UV radiation environment in the understory of a leafing out forest, 26<sup>th</sup> Ag and Forest Meteorology Conference, American Meteorological Society, Co-presenter with R. H. Grant, K Apostol, Vancouver, British Columbia, Canada

25–26 2004, Impact of sky conditions on erythemal UV- B exposure under tree canopies, 16<sup>th</sup> Biometeorology and Aerobiology Conference, American Meteorological Society, Co-presenter with G. M. Heisler, R. H. Grant, Vancouver, British Columbia, Canada

31 October–4 November 2004, Interactive effects of UV-B radiation and water stress on Cotton growth and development. American Society of Agronomy Annual Meetings, Co-presenter with V. G. Kakani, K. R. Reddy, D. Zhao, S. Koti, Seattle, WA, USA

31 October–4 November 2004, High temperature and UV-B radiation effects on photosynthesis and nonstructural carbohydrate composition of cotton, American Society of Agronomy Annual Meetings, Co-presenter with D. Zhao, K. R. Reddy, V. G. Kakani, S. Koti, Seattle, WA, USA

31 October–4 November 2004, Response of Corn to Ultraviolet-B Radiation under Controlled Environmental Conditions, American Society of Agronomy Annual Meetings, Co-presenter with K. R Reddy, S. Koti, V. G. Kakani, D. Zhao, V. R. Reddy, Seattle, WA, USA

2–6 August 2004, Effect of enhanced UV-B radiation combined with other climate stressors on winter wheat. Ultraviolet Ground- and Space- based Measurements, Models, and Effects IV, as Part of International Symposium on Optical Science and Technology, SPIE's 49<sup>th</sup> Annual Meeting, Co-presenter with Y. Zheng, J.R. Slusser, R.H. Grant, Denver, Colorado,

2–6 August 2004, Response of four field crops to enhanced UV-B radiation. Ultraviolet Ground- and Space- based Measurements, Models, and Effects IV, as Part of International Symposium on Optical Science and Technology, SPIE's 49<sup>th</sup> Annual Meeting, Co-presenter with Y. Zheng, J.R. Slusser, C. Wang, Denver, Colorado

2–6 August 2004, Cloud cover impacts on human exposures under tree canopies", Ultraviolet Ground- and Space-based Measurements, Models, and Effects IV, as Part of International Symposium on Optical Science and Technology, SPIE's 49<sup>th</sup> Annual Meeting, Co-presenter with R.H. Grant, G.M Heisler, Denver, Colorado

2–6 August 2004, Ultraviolet-B radiation alters flower morphology, pollen quantity, and quality of soybean (*Glycine max L.*) genotypes. Ultraviolet Ground- and Space- based Measurements, Models, and Effects IV, as Part of International Symposium on Optical Science and Technology. SPIE's 49<sup>th</sup> Annual Meeting, Co-presenter with K.R Reddy, S. Koti, V.G. Kakani, V.R. Reddy, D. Zhao, Denver, Colorado

2–6 August 2004, Response of carbon fluxes of Xinjiang oasis ecosystem to climate and LUCC changes from 1981-2000, Remote Sensing and Modeling of Ecosystems for Sustainability, as Part of International Symposium on Optical Science and Technology. SPIE's 49<sup>th</sup> Annual Meeting, Co-presenter with Z. Gao, X. Pan, J.R. Slusser, J. Qi, Y.Ma, Denver, Colorado

2–6 August 2004, Effect of climate and LUCC changes on carbon fluxes in China. Remote Sensing and Modeling of Ecosystems for Sustainability, as Part of International Symposium on Optical Science and Technology. SPIE's 49<sup>th</sup> Annual Meeting, Co-presenter with Z. Gao, X. Pan, J.R. Slusser, Y. Ma, Denver, Colorado

2–6 August 2004, Pan, X., W. Gao, Y. Ma, K. Guo, and R. Wang. 2004. Study of ecosystem structure, ecological process, and its function differentiation in the western arid zone of China, Remote Sensing and Modeling of Ecosystems for Sustainability, as Part of International Symposium on Optical Science and Technology. SPIE's 49<sup>th</sup> Annual Meeting, Denver, Colorado

2–6 August 2004, Li, G., H.L.A. Huang, W. Gao, E. Weisz. 2004. Analysis of regional high-spatial-resolution sounding products: demonstration of MODIS and AIRS stand-alone and synergistic processing approaches. Atmospheric and Environmental Remote Sensing Data Processing and Utilization: an End-to-End System Perspective, as Part of International Symposium on Optical Science and Technology. SPIE's 49<sup>th</sup> Annual Meeting, Denver, Colorado

23–24 March 2004, Remote sensing data assimilation into an integrated model to study climate-ecosystem interactions. NASA ESTO Technology Strategy Team Meeting, Presenter, Boulder, Colorado

3–8 August 2003, Effect of supplemental UV-B on maize yield structure. Ultraviolet Ground-and Space-based Measurements, Models, and Effects III, The International Symposium on Optical Science and Technology, SPIE's 48<sup>th</sup> Annual Meeting, San Diego Convention Center, Co-presenter with Y. Zheng, J.R. Slusser, X. Wang, Y. He, R. Zhang, San Diego, California

3–8 August 2003, Inclusion of an ultraviolet radiation transfer component in an urban forest effects model for predicting tree influences on potential human exposure to UV radiation. Ultraviolet Ground-band Space-based Measurements, Models, and Effects III, The International Symposium on Optical Science and Technology, SPIE's 48<sup>th</sup> Annual Meeting, Co-presenter with G.M. Heisler, R.G. Grant, D.J. Nowak, D.E. Crane, San Diego Convention Center, San Diego, California

3–8 August 2003, Interactive effects of Atmospheric carbon dioxide and ultraviolet-B radiation on cotton growth and development. Ultraviolet Ground-band Space-based Measurements, Models, and Effects III, The International Symposium on Optical Science and Technology, SPIE's 48<sup>th</sup> Annual Meeting, Co-presenter with K. R. Reddy, D. Zhao, V. G. Kakani, San Diego Convention Center, San Diego, California

3–8 August 2003, Modeling the responses of net primary productivity of oasis ecosystem to climate change from 1981 to 2000 in Xinjiang, China. Ecosystems Dynamics, Agricultural Remote Sensing and Modeling, and Site-Specific Agriculture, The International Symposium on Optical Science and Technology, SPIE's 48<sup>th</sup> Annual Meeting, Co-presenter with Z. Gao, X. Pan, J. Zhang and J.R. Slusser, San Diego Convention Center, San Diego, California

3–8 August 2003, Remote sensing and modeling the dynamics of soil moisture and vegetative cover of an arid and semiarid area in Xinjiang, China. Ecosystems Dynamics, Agricultural Remote Sensing and Modeling, and Site-Specific Agriculture, The International Symposium on Optical Science and Technology, SPIE's 48<sup>th</sup> Annual Meeting, Co-presenter with Zhan, X., J. Qi, P.R. Houser, X. Pan, San Diego Convention Center, San Diego, California

2–6 November 2003, Response of cotton genotypes to UV-B radiation. American Society of Agronomy Annual Meetings, Co-presenter with S. Koti, K.R. Reddy, V.G. Kakani, D. Zhao, Denver, Colorado, USA

2–6 November 2003, Effect of ultraviolet-B radiation and temperature on growth, development and physiology of cotton, American Society of Agronomy Annual Meetings, Co-presenter with Kakani, V. G., K. R. Reddy, D. Zhao, S. Koti, Denver, Colorado, USA

5–9 July 2003, Short-term responses of Barley to changes in ambient levels of UV-B radiation and their role in UV-B protection. Special Symposium on UV Effects on Terrestrial Ecosystems, 31<sup>st</sup> Annual Meeting American Society for Photobiology, Co-presenter with J.H. Sullivan, Baltimore, Maryland, USA

5–9 July 2003, Cotton crop responses to changes in UV-B radiation, carbon dioxide, and temperature. Special Symposium on UV Effects on Terrestrial Ecosystems, 31<sup>st</sup> Annual Meeting American Society for Photobiology, Co-presenter with Reddy, K. R., V. G. Kakani, D. Zhao, S. Koti, Baltimore, Maryland, USA



10–13 March 2002, An Introduction of USDA UV-B Monitoring Program and Atmospheric Corrections by Using Program's Aerosol Optical Depth Measurements. 32<sup>nd</sup> Biological Systems Simulation Work Group Symposium/Workshop on Remote Sensing and Modeling Applications for Natural Resource Management, Mississippi State MS, Co-presenter with J.R. Slusser, Mississippi, USA

10–13 March 2002, and W. Gao. 2002. Quantifying the effects of ultraviolet-B radiation on cotton growth and development. 32<sup>nd</sup> Biological Systems Simulation Work Group Symposium/Workshop on Remote Sensing and Modeling Applications for Natural Resource Management, Mississippi State MS, 10-13 March 2002 Co-presenter with Kakani, V. G., K.R. Reddy, D. Zhao, A.R. Mohammed, Mississippi, USA

5 June 2002, A Brief Report of USDA Ongoing Research of UV Impact on Agriculture. The Third Front Range UV and Ozone Workshop, Co-presenter with J.R. Slusser, Boulder, CO

23–27 October 2002, Impact of enhanced ultraviolet-B irradiance on maize yield and qualities. Int. Symposium on Remote Sensing of the atmosphere, ocean, environment and space: Ultraviolet ground- and space- based measurements, models, and effects. Co-presenter with Y.F. Zheng, J.R. Slusser, G.M. Heisler, D.L. Hu, and J.Q. Xu, Hangzhou, China

23–27 October 2002, Cotton responses to UV-B radiation: experimentation and modeling. Int. Symposium on Remote Sensing of the atmosphere, environment and space: Ultraviolet ground- and space- based measurements, models, and effects. Co-presenter with K.R. Reddy, V.G. Kakani, D.L. Zhao, Hangzhou, China

23–27 October 2002, Solar ultraviolet-B radiation in Baltimore, Maryland, and vicinity. Int. Symposium on Remote Sensing of the atmosphere, ocean, environment and space: Ultraviolet ground- and space- based measurements, models, and effects. Co-presenter with Heisler, G.M.; R.H. Grant, Hangzhou, China

23–27 October 2002, Intra- and inter specific comparisons of leaf UV-B absorbing-compound concentration of southern broadleaf trees in the United States. Int. Symposium on Remote Sensing of the atmosphere, environment and space: Ultraviolet ground- and space- based measurements, models, and effects. Co-presenter with Qi, Y.D., S.J. Bai, G.M. Heisler, Hangzhou, China

23–27 October 2002, Growth analytic simulation of soybean and winter wheat crops under different doses of ultraviolet-B irradiance. Int. Symposium on Remote Sensing of the atmosphere, ocean, environment and space: Ultraviolet ground- and space- based measurements, models, and effects. Co-presenter with Zheng, Y.F., J.R. Slusser, Y.H. He, and R.H. Grant, Hangzhou, China

23–27 October 2002, Effect of natural UV radiation near the Earth's surface on the growth and production of wheat. Int. Symposium on Remote Sensing of the atmosphere, ocean, environment and space: Ultraviolet ground- and space- based measurements, models, and effects. Co-presenter with Wang, C.H., Y.F. Zheng, Hangzhou, China

23–27 October 2002, Responses of net primary production (NPP) to the different climate scenarios with Biomass-BGC model in oasis area along the Tiashan Mountains. Int. Symposium on Remote Sensing of the atmosphere, ocean, environment and space: Ecosystems dynamics, Ecosystem-Society Interactions, and Remote Sensing Applications for Semi-Arid and Arid Land. Co-presenter with Z.Q. Gao, L.X. Lu, X.L. Pan, and Y.J. Ma, Hangzhou, China

23–27 October 2002, Sustainability of vegetation over Northwest China, Part 1: Climate Response to Grassland. Int. Symposium on Remote Sensing of the atmosphere, ocean, environment and space: Ecosystems dynamics, Ecosystem-Society Interactions, and Remote Sensing Applications for Semi-Arid and Arid Land. Co-presenter with X.Z. Liang, X.L. Pan, and Y.J. Ma., Hangzhou, China

23–27 October 2002, Monitoring the hydrologic and vegetation dynamics of semi-arid and arid land with field measurement, satellite remote sensing, and land surface modeling, Int. Symposium on Remote Sensing of the atmosphere, ocean, environment and space: Ecosystems dynamics, Ecosystem- Society Interactions, and Remote Sensing Applications for Semi-Arid and Arid Land. Co-presenter with Zhan, X.W., X.L. Pan, and Y.J. Ma., Hangzhou, China

23–27 October 2002, Remote sensing for landscape ecology change of Western China, Int. Symposium on Remote Sensing of the atmosphere, ocean, environment and space: Ecosystems dynamics, Ecosystem-Society Interactions, and Remote Sensing Applications for Semi-Arid and Arid Land. Co-presenter with Zhao, S.L., X.L. Pan, and Y.J. Ma., Hangzhou, China

23–27 October 2002, Simulations of plant transpiration and primary productivity leaf, canopy and regional scales with integrated process models and remote sensing data, Int. Symposium on Remote Sensing of the atmosphere, environment and space: Ecosystems dynamics, Ecosystem-Society Interactions, and Remote Sensing Applications for Semi-Arid and Arid Land. Co-presenter with Chen, D.X., X.L. Pan, Y.J. Ma, and B. Su., Hangzhou, China

December 2001, AMORE: Atmospheric Modeling of Radiation Experiment, American Geophysical Union Annual Meeting, Co-presenter with J.R. Slusser, L.C. Harrison, P. Disterhoft, K. Lantz, J. DeLuisi, R. McKenzie, P. Johnston, S. Madronich, J. Frederick, B. Mayer, B. Bodhaine, B. Davis, San Francisco CA

November 2001, Aerosol Optical Depths from 325 nm to 860 nm from the USDA UVB Network, Third International Conference on Geospatial Information in Agriculture and Forestry, Co-presenter with Slusser J., Denver CO

October 2001, Issues with UV Ground-based Measurement and Satellite Estimation Comparisons, Nanjing Institute of Meteorology, Presenter, Nanjing, China

October 2001, Regional Interaction of Climate and Ecosystem—Coupling Regional Climate Model with Eco/Crop models to assess the future climate change on Agricultural and Rangeland, in Xinjiang University, Presenter, Urmqi, China

29 July–3 August 2001, Modeling ultraviolet-B radiation in a maize canopy. Ultraviolet Ground- and Space-based Measurements, Models, and Effects I, as Part of International Symposium on Optical Science and Technology. SPIE's 46<sup>th</sup> Annual Meeting, Co-presenter with R.H. Grant, G.M. Heisler, and J.R. Slusser, San Diego, CA

29 July–3 August 2001, Impact of Enhanced Ultraviolet-B Irradiance on Cotton Yield and Qualities. Ultraviolet Ground- and Space- based Measurements, Models, and Effects I, as Part of International Symposium on Optical Science and Technology. SPIE's 46<sup>th</sup> Annual Meeting, Co-presenter with Y. Zheng, J.R. Slusser, G.M. Heisler, San Diego, CA

29 July–3 August 2001, Comparisons of UV Synthetic Spectra Retrieved from the USDA UV Multi-filter Rotating Shadow-band Radiometer with Collocated USDA Reference UV Spectroradiometer and NIWA UV Spectroradiometer. Ultraviolet Ground- and Space-based Measurements, Models, and Effects I, as Part of International Symposium on Optical Science and Technology. SPIE's 46<sup>th</sup> Annual Meeting, Co-presenter with J.R. Slusser, L.C. Harrison, P. Disterhoft, Q. Min, B. Olson, K. Lantz and B. Davis, San Diego, CA

April 2000, Performance of the COTTAM and CERES Rice Crop Models in the Southeastern US: Yield Response to Different Climate Change Scenarios, Association of American Geographers Annual Meeting, Co-presenter with L.O. Mearns, McDaniel, Pittsburgh PA

April 2000, The Issue of Spatial Scale in Integrated Assessments: An Example of Agriculture in the Southeastern US, Association of American Geographers Annual Meeting, Co-presenter with Mearns, L.O., G. Carbone, L. McDaniel, E. Tsvetsinskaya, Pittsburgh PA

May 2000, Direct-Sun Column Ozone Retrieval by the UV-MFRSR and Comparison with Those from Brewer and Dobson Spectrophotometers, The Second Front Range UV Workshop at National Center for Atmospheric Research, Co-presenter with J.R. Slusser, J. Gibson, G. Scott, and D. S. Bigelow, Boulder CO

July 2000, UV Waveband Solar Irradiance in Different Vegetation Canopies: Measurements and Modeling, UVB Health Effects Workshop, Presenter, Steamboat Springs CO

July 2000, Spectral Radiative Properties of Various Tree Species in Ultraviolet Wavelengths and the Impacts on Irradiance Modeling and Measurement, UVB Health Effects Workshop, Presenter, Steamboat Springs CO

November 2000, A Geometric UV<sub>B</sub> Radiation Transfer Model Applied to Agricultural Vegetation Canopies, Stratospheric Processes And their Role in Climate, UV Impacts Workshop, Co-presenter with R.H. Grant, G. M. Heisler, J. R. Slusser, Mar del Plata, Argentina,

November 2000, Comparison of USDA UV irradiances with measurements from NASA TOMS under various aerosol and cloud conditions. Stratospheric Processes And their Role in Climate, UV Impacts Workshop, Co-presenter with J.R. Slusser, Mar del Plata, Argentina

November 2000, An Introduction of USDA UV-B Radiation Monitoring Program and A Radiation Transfer Model for Open Canopies in the UV-B Waveband, American Society of Agronomy Annual Meeting, Co-presenter with J.R. Slusser, Minneapolis MN

November 2000, Cotton and Rice Yields Change with the Future Climate in the Southeastern US, American Society of Agronomy Annual Meeting, Co-presenter with L.O. Mearns, L. McDaniel, E. Tsvetsinskaya, Minneapolis MN

November 2000, The Performance of CERES-Rice and CERES-Wheat Crop Models in the Southeastern USA and the Yangtze Delta of China, American Society of Agronomy Annual Meeting, Co-presenter with L.O. Mearns, E. Tsvetsinskaya L. McDaniel Z.Q., Jin and T. Mavromatis, Minneapolis MN

November 2000, Assessing the effect of different spatial resolutions of climate change scenarios on the changes in corn, sorghum, soybean, and wheat production in the southeastern United States, American Society of Agronomy Annual Meeting, Co-presenter with E. Tsvetsinskaya, L.O. Mearns, G. Carbone, C. Locke, L. McDaniel, Minneapolis MN

November 2000, Modeling and Measurement of Ultraviolet Irradiance in Vegetation Canopies, Natural Resource Ecology Laboratory, Colorado State University, Presenter, Fort Collins CO

June 1998, Validation and soil sensitivity tests with CERES-Wheat, and –Rice in the southeastern United States, The conference of Modeling for Crop-Climate-Soil-Pest System and Its Applications in Sustainable Crop Production, Co-presenter with L.O. Mearns, and T. Mavromatis, Nanjing, China