

**CURRICULUM VITA**  
**Wei Gao, Ph.D.**

**ADDRESS**

USDA UV-B Monitoring and Research Program  
419 Canyon Avenue, Suite 226  
Natural Resource Ecology Laboratory  
Colorado State University  
Fort Collins, CO 80521, United States

Phone (970) 491-3609  
Fax (970) 491-3601  
Cell phone (970) 980-6553  
Email wgao@uvb.nrel.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  
2004 M.S., Computer Information System, Regis University, Denver, CO  
1987 B.A., English, Anhui Normal University, Wuhu, China  
1982 B.S., Applied Meteorology, Nanjing Institute of Meteorology, Nanjing, China

**ACADEMIC POSITIONS**

(2007-present) Director, Senior Research Scientist, USDA UV-B Monitoring and Research Program, and Center of Remote Sensing and Modeling for Agricultural Sustainability, Natural Resource Ecology Laboratory, Colorado State University, Fort Collins, Colorado  
(2010-present) Professor, Department of Ecosystem Science and Sustainability, Colorado State University, Fort Collins, Colorado  
(2003-present) Joint 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 University of Science and Technology, China  
(1982-1985) Assistant Lecturer, Applied Meteorology Laboratory, Anhui University of Science and Technology, China

## **PROFESSIONAL AFFILIATIONS AND ACTIVITIES**

Director of China Programs, Colorado State University

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

Editor-in-Chief, Journal of Applied Remote Sensing, U.S.

Co-Editor-in-Chief, Frontiers of Earth Science, China (HEP) Higher Education Publisher/US Springer

Editor, UV Radiation in Global Climate Change: Measurements, Modeling and Effects on Ecosystems, 2009, Springer-Verlag and Tsinghua University Press

Editor, Earth Science Satellite Remote Sensing I, II, 2006, Springer-Verlag and Tsinghua University Press, Beijing and Springer-Verlag GmbH Berlin, Heidelberg

Member of Editorial Advisory Board for the SPIE Newsroom

Member of Editorial Board for the Frontiers of Environmental Science & Engineering

Member of Editorial Committee for the Journal of Meteorology and Disaster Reduction Research

Member of International Optical Engineering Society (SPIE)

Member of American Society of Agronomy (ASA)

Member of American Meteorological Society (AMS)

Co-Chair, CSU International Colloquium, September 8-10, 2010

Chair, Remote and In-situ Sensing Program, International Optical Engineering Society (SPIE), 2003-2007

Member, the SPIE Publication Committee

Member, Regional Scenario Team of North America, United Nations Environment Programme (UNEP)

Member, Board of Advisory Committee, Center for Capacity Building, University of Colorado

Member, Board of Advisors of China Meteorological Administration (CMA)

Council Chair of Society of Chinese American Professors and Scientists, U.S., 2005-2007

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 Agronomy*

## **HONORS AND AWARDS**

2010, NREL Most Publications Award, Natural Resource Ecology Laboratory, CSU

2009, NREL Most Publications Award, Natural Resource Ecology Laboratory, CSU

2009, Lifetime Distinguished International Service Award, Colorado State University

2005, Fellow, International Optical Engineering Society (SPIE), San Diego

2002, Excellent Dedication and Service, International Optical Engineering Society (SPIE), Hangzhou

## **CONTRACTS & GRANTS**

### **Funded Projects:**

(2011) Global Change/USDA Ultraviolet Radiation Monitoring and Research Program, PI, USDA – NIFA, \$1,307,746

(2011) ColoradoView, PI, AmericaView Consortium, \$23,800

(2010) Global Change/USDA Ultraviolet Radiation Monitoring and Research Program, PI, USDA – NIFA, \$1,310,381

(2010) ColoradoView, PI, AmericaView Consortium, \$25,000

(2009) Operation and Management of the UV-B Monitoring Network and Development of the Integrated Climate-Crop Modeling Assessment System, PI, USDA CSREES, Global Change/Ultraviolet Radiation Monitoring Program, \$1,312,660

(2009) ColoradoView, PI, AmericaView Consortium, \$23,152

(2008) Operation and Management of the UV-B Monitoring Network and Development of the Integrated Climate-Crop Modeling Assessment System, PI, USDA CSREES, Global Change/Ultraviolet Radiation Monitoring Program, \$1,413,474

(2008-2011) Integrated Bioclimatic-Dynamic Modeling of Climate Change Impacts on Agricultural and Invasive Plant Distributions in the United States, PI, USDA/CSREES, \$530,000

(2007) Development and Management of USDA UV-B Monitoring Program, PI, USDA Global Change Program, USDA CSREES W-502-Hatch/Multistate/McIntire Stennis, \$1,320,231

(2006) Development of a Fine-Resolution Land Surface Emissivity Parameterization, PI, NAVY/University of Wisconsin, \$50,000

(2006) Development and Management of USDA UV-B Monitoring Program, Co-PI, USDA Global Change Program, \$2,018,497

(2006) Molecular Aspects of Plant Secondary Metabolism in Response to UV Radiation, PI, USDA CSREES, \$5,000

(2005) Development and Management of USDA UV-B Monitoring Program, Co-PI, USDA Global Change Program, \$2,089,000

- (2005) International Conference on Resources, Ecosystems, and Sustainability of Arid and Semi-arid Regions, PI, UNESCO Participation Programme, \$15,000
- (2004) Development and Management of USDA UV-B Monitoring Program, Co-PI, USDA Global Change Program, \$1,890,000
- (2003) Development and Management of USDA UV-B Monitoring Program, Co-PI, USDA Global Change Program, \$2,089,000
- (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

### **COMMITTEES**

CSU NREL Executive Committee  
CSU GDPE Review Committee  
CSU Internationalization Plan Operations Committee  
CSU 2010 Colloquium Planning Committee, Co-Chair

### **STUDENT ADVISING/GRADUATE SUPERVISION**

#### **GRADUATE STUDENTS:**

##### Current Graduate Advisees:

Chen, Maosi (PhD)  
Li, Zhihua (PhD)  
Liu, Ke (PhD)  
Tang, Hongzhao (PhD)  
Zhang, Huifang (PhD)

Qu, Peiqing (MS)  
Zhong, Hongling (MS)  
Zhou, Chun (MS)

##### Past 5 years

Liu, Chaoshun (PhD)  
Liu, Shuyan (PhD)  
Lu, Qifeng (PhD)  
Smith, William (MS)  
Xie, Xiaoping (PhD)  
Zou, Lanjun (PhD)

#### **POSTDOCTORAL RESEARCHERS:**

##### Current:

Gao, Zhiqiang (PhD)  
Kakani, Vijaya Gopal (PhD)  
Xu, Min (PhD)

## **OTHER ACTIVITIES/ACCOMPLISHMENTS**

Changjiang Scholar Lecturing Professor, East China Normal University, Shanghai, China

Director, NREL – ECNU– CAS Joint Laboratory of Environmental Remote Sensing and Data Assimilation

Leading Chair, 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, 1 – 5 August 2010, San Diego, California

Leading Chair, 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, 2 – 6 August 2009, San Diego, California

Co-Chair, 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, 2 – 6 August 2009, San Diego, California

Leading Chair, 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, 9 – 16 August 2008, San Diego, California

Leading Chair, 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, 26 – 30 August 2007, San Diego, California

Leading Chair, 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, 13 – 17 August 2006, San Diego, California

Leading Chair, 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, 31 July – 4 August 2005, San Diego, California

Co-Chair, 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, 31 July – 4 August 2005, San Diego, California

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

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

Leading Chair, 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, 2 – 6 August 2004, Denver, Colorado

Co-Chair, 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, 2 – 6 August 2004, Denver, Colorado

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

Co-Chair, 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, 3 – 8 August 2003, San Diego, California

Leading Chair, 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, 3 – 8 August 2003, San Diego, California

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

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

Leading Chair, 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, 23-27 October 2002, Hangzhou, China

Co-Chair, 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, 29 July – 3 August 2001, San Diego, California

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

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

Program Committee Member, 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, 19 - 22 September 2005, Bruges, Belgium

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

Program Committee Member, 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, 31 July – 4 August 2005, San Diego, California

Program Committee Member, 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, 2 – 6 August 2004, Denver, Colorado

Program Committee Member, 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, 23-27 October 2002, Hangzhou, China

Program Committee Member, 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, 23-27 October 2002, Hangzhou, China

## **PUBLICATIONS**

### **Books:**

**Gao, W.**, D. Schmoltdt, J.R. Slusser (eds.). 2009. UV Radiation in Global Climate Change: Measurements, Modeling and Effects on Ecosystems, Springer-Verlag GmbH Berlin, Heidelberg and Tsinghua University Press, Beijing

Qu, J., **W. Gao**, M. Kafatos, R. Murphy and V. Salomonson. 2006. Earth Science Satellite Remote Sensing I, Springer-Verlag GmbH Berlin, Heidelberg and Tsinghua University Press, Beijing

Qu, J., **W. Gao**, M. Kafatos, R. Murphy and V. Salomonson. 2006. Earth Science Satellite Remote Sensing II, Springer-Verlag GmbH Berlin, Heidelberg and Tsinghua University Press, Beijing

### **Special Issues with Refereed Journals:**

Slusser, J.R., **W. Gao**, and J. Herman. 2005. Advances in UV Ground- and Space-based Measurements and Modeling, *Journal of Optical Engineering*, Volume 44, Number 4

Krizek, D.T., and **W. Gao**. 2004. Ultraviolet Radiation and Terrestrial Ecosystems, *Journal of Photochemistry and Photobiology*, Volume 79, Number 5

**Gao, W.**, J.R. Slusser, R.H. Grant, and G.M. Heisler. 2003. UV Radiation and Its Impacts on Agriculture and Forests, *Journal of Agricultural and Forest Meteorology*, Volume 120, Number 1-4

Slusser, J.R., **W. Gao**, and R. McKenzie. 2002. The UV Measurements and Modeling, *Journal of Optical Engineering*, Volume 41, Number 12

### **Scientific Proceedings:**

**Gao, W.**, T. Jackson, and Jinnian Wang. 2010. Remote Sensing and Modeling of Ecosystems for Sustainability, VII, Proceedings of SPIE, Vol. 7809, 180 pages

**Gao, W.**, and T. Jackson. 2009. Remote Sensing and Modeling of Ecosystems for Sustainability, VI, Proceedings of SPIE, Vol. 7454

Herman, J. and **W. Gao**. 2009. Ultraviolet and Visible Ground- and Space-based Measurements, Trace Gases, Aerosols and Effects, VI, Proceedings of SPIE

**Gao, W.**, and H. Wang. 2008. Remote Sensing and Modeling of Ecosystems for Sustainability, V, Proceedings of SPIE, Vol. 7083, 463 pages

**Gao, W.**, and S. Ustin. 2007. Remote Sensing and Modeling of Ecosystems for Sustainability IV, Proceedings of SPIE, Volume 6679, 532 pages

**Gao, W.**, and S. Ustin. 2006. Remote Sensing and Modeling of Ecosystems for Sustainability III, Proceedings of SPIE, Volume 6298, 680 pages

Tong, Q.X., X.W. Chen, A. Huang, and **W. Gao**. 2006. Remote Sensing and Space Technology for Multidisciplinary Research and Applications, Proceedings of SPIE, Volume 6199, 250 pages

Tong, Q.X., **W. Gao**, and H.D. Guo. 2006. Remote Sensing of the Environment: 15<sup>th</sup> National Symposium on Remote Sensing of China, Proceedings of SPIE, Volume 6200, 285 pages

Bernhard, G., J.R. Slusser, J.R. Herman, and **W. Gao**. 2005. Ultraviolet Ground- and Space-based Measurements, Models, and Effects V, Proceedings of SPIE, Volume 5886, 318 pages

**Gao, W.**, and D. Shaw. 2005. Remote Sensing and Modeling of Ecosystems for Sustainability II, Proceedings of SPIE, Volume 5884, 552 pages

Slusser, J.R., J.R. Herman, **W. Gao**, and G. Bernhard. 2004. Ultraviolet Ground- and Space-based Measurements, Models, and Effects IV, Proceedings of SPIE, Volume 5545, 138 pages

**Gao, W.**, and D. Shaw. 2004. Remote Sensing and Modeling of Ecosystems for Sustainability I, Proceedings of SPIE, Volume 5544, 616 pages

Slusser, J.R., J.R. Herman, and **W. Gao**. 2003. Ultraviolet Ground- and Space-based Measurements, Models, and Effects III, Proceedings of SPIE, Volume 5156, 422 pages

**Gao, W.**, and D. Shaw. 2003. Ecosystems Dynamics, Agricultural Remote Sensing and Modeling, and Site-Specific Agriculture, Proceedings of SPIE, Volume 5153, 316 pages

**Gao, W.**, J.R. Herman, G.Y. Shi, K. Shibasaki and J.R. Slusser. 2003. Ultraviolet Ground- and Space-based Measurements, Models, and Effects II, Proceedings of SPIE, Volume 4896, 252 pages

Slusser, J.R., **W. Gao**, and J. Herman. 2002. Ultraviolet Ground- and Space-based Measurements, Models, and Effects I, Proceedings of SPIE, Volume 4482, 474 pages

Pan, X., **W. Gao**, M.H. Glantz, and Y. Honda. 2002. Ecosystems Dynamics, Ecosystem-Society Interactions, and Remote Sensing Applications for Semi-Arid and Arid land, Proceedings of SPIE, Volume 4890, 1079 pages

#### **Refereed Journal Articles:**

Chang, Ni-Bin, 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, 359-368.

- Gao, Z., **W. Gao**, and N. B. Chang. 2010. Impact of climate and land use/cover changes on the carbon cycle in China (1981-2000): a system-based assessment, *Biogeosciences*, 4(7): 5517-5555. doi:10.5194/bgd-7-5517-2010
- Gao, Z., **W. Gao**, and N. B. 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 Sens.*, 2, 262-277, doi:10.390/rs2010262
- Gao, Z.Q., **W. Gao**, and N.B. Chang. 2010. Comparative Analyses of Ultraviolet-B over the Continental US with NASA TOMS Data and USDA Ground-based Measurements. *Journal of Applied Remote Sensing*, Vol. 4, 043547, doi: 10.1117/1.3507249.
- Gao, Z. Q., C. S. Liu, **W. Gao**, and N. B. Chang. 2010. A coupled remote sensing and the surface energy balance with topography algorithm (SEBTA) to estimate actual evapotranspiration under complex terrain, *Hydrology and Earth System Sciences*, 4(7):4875-4924. doi:10.5194/hessd-7-4875-2010
- Gao, Z. Q., **W. Gao**, N. Chang. 2010. Integrating Satellite-based Temperature Vegetation Dryness Index (TVDI) with Regional Water Stress Index (RWSI) for Drought Impact Assessment in a Developed Coastal Region. *International Journal of Applied Earth Observation and Geoinformation*, doi:10.1016/j.jag.2010.10.005.
- Smith, W., **W. Gao**, H. Steltzer, M. 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.-Z. 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*, 1–15, doi:10.5194/acp-10-1-2010
- Zhang, H., H-L 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*, Volume 4, Number 3, 363-373, doi: 10.1007/s11707-010-0023-7
- Bao, Y., **W. Gao**, 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
- Corr, C.A., N. Krotkov, S. Madronich, J.R. Slusser, B. Holben, **W. Gao** and S.M. Kreidenweis. 2009. Retrieval of Aerosol Single Scattering Albedo at Ultraviolet Wavelengths at the T1 Site During Milagro, *Atmos. Chem. Phys. Discuss.*, 9, 4971-5008
- Gao Z. Q., J.C. Ning, and **W. Gao**. 2009. Response of land surface temperature to coastal land use/cover change by remote sensing, *Transactions of the CSAE*, 25(9): 274—281
- Gao, Z., W.J. Zhang, **W. Gao**, and N. B. Chang. 2009. Using MODIS Images for Modeling the Land Surface Heat Exchange Process in Inner Mongolia, China, *Journal of Applied Remote Sensing*, Vol(3), 033573, DOI: 10.1117/1.3290811
- Liu, C.S., **W. Gao**, and Z.Q. Gao. 2009. Estimation of regional surface evapotranspiration using MODIS Products, *Advances in Water Science*, 20(6):782-788

Liu, S.Y., **W. Gao**, M. Xu, X.Y. Wang, and X.Z. Liang. 2009. Regional Climate Model Simulation of China Summer Precipitation Using an Optimal Ensemble of Cumulus Parameterization Schemes, *Frontiers of Earth Science*, 3(2): 248-257

Liu, S.Y., W. Gao, M. Xu, X.Y. Wang and X.Z. Liang. 2009. China summer precipitation simulations using an optimal ensemble of cumulus schemes, *Frontiers of Earth Science*, 3(2): 248-257

Smith, W., **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

Xie, X.P., Z.Q. Gao, and **W. Gao**. 2009. Estimation of land instantaneous photosynthetically active radiation over complex terrain based on MODIS products. *Journal of Remote Sensing*, 13(5):779-784

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*, Vol.133-2, 363-372

Lantz, K., P. Disterhoft, J. Slusser, **W. Gao**, J. Berndt, G. Bernhard, R. Booth, J. Ebrahimian, 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*, Vol. 2, 023547, doi: 10.1117/1.3040299

Liu, C.S., **W. Gao**, Z.Q. Gao, and B.Y. Du. 2008. Land surface temperature retrieval of different land use types from ETM+ image. *Journal of Nanjing Institute of Meteorology*, Vol. 31, No. 4, 503-510

Liu, S.Y., X.Z. Liang, **W. Gao**, and H. Zhang. 2008. Application of climate-weather research and forecasting model (CWRF) in China: domain optimization. *Journal of Atmospheric Sciences*, Vol. 32, No.3, 457-468

Singh, S.K., G. 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*, Vol. 93, 71-81

Wang, X.L., **W. Gao**, J.R. Slusser, J. Davis, B. Olson, S. Janssen, G. Janson, W. Durham, R. Tree, and R. Deike. 2008. USDA UV-B monitoring system: an application of centralized architecture. *Computers and Electronics in Agriculture*, doi:10.1016/j.compag.2008.04.006

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 on soybean (*Glycine max L.*) growth and development. *Environmental and Experimental Botany* (60 1-10)

Koti, S., K. R. Reddy, G. W. Lawrence, V. R. Reddy, V. G. Kakani, D. Zhao and **W. Gao**. 2007. Effect of enhanced UV-B radiation on reniform nematode (*Rotylenchus reniformis* Linford and Oliveira) populations in cotton (*Gossypium hirsutum L.*). *Plant Pathology Journal*, 6: 51-59

- Liu, C., **W. Gao**, Z. Gao. 2007. The study of responses of remote sensing based ET and LST to LUCC. *The Journal of Agricultural Engineering*, 8, 1-8
- Thines, N., L. Shipley, J. Bassman, J. Fellman, D. Mattison, J. Slusser, **W. Gao**. 2007. Effects of Enhanced UV-B Radiation on Plant Chemistry: Nutritional Consequences for a Specialist and Generalist Lagomorph. *Journal of Chemical Ecology*, Vol. 33, 5, 1025-1039
- Grant, R.H., K. Apostol, and **W. Gao**. 2006. Biologically effective UV-B exposures of an oak-hickory forest understory during leaf out. *Agric. Forest Meteorol.* Vol. 132 (1-2), 28-43
- Gong L., X.L. Pan, W. Q.D. Shi, Z.M. Wang and **W. Gao**. 2005. Land use pattern and influential factors in the upper reaches of Tarim River. *Resources Sci.*, Vol. 27 (4), 71-75
- Liang, X.Z., 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. *J. Geophysical Research*, Vol. 110, D11107
- Liu, W.G., X.L. Pan, **W. Gao**, Q.D. Shi, G.H. Lu, and K. Guo. 2005. Estimation of ecosystem biomass in Fukang Oasis of Xinjiang using remote sensing. *Resources Sci.*, Vol. 27 (5), 134-140
- 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*, Vol. 124, 189-199
- Gao, W.**, Y.F. Zheng, J.R. Slusser, G.M. Heisler, R. H. Grant, J.Q. Xu and D.L. He. 2004. Effects of supplementary ultraviolet-B irradiance on maize yield and qualities: a field experiment. *J. of Photochemistry and Photobiology*. Vol. 80, 127-131
- 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. *J. of Photochemistry and Photobiology*. Vol. 80, 422-428
- 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*. Vol. 121, 250-257
- Krizek, D. T., and **W. Gao**. 2004. Ultraviolet Radiation and Terrestrial Ecosystems. *J. of Photochemistry and Photobiology*. Vol. 79 (5), 379-381
- Pan, X.L., Y.J. Ma, **W. Gao**, J.G. Qi, Q.D. Shi, and H.Y. Lu. 2004. Eco-environmental evolution in arid area of west China. *J. of Desert Research*, Vol. 24 (6), 663-673
- 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. *J. of Photochemistry and Photobiology*. Vol. 79 (5), 416-427
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#### **PAPERS PRESENTED/SYMPOSIA/INVITED PROFESSIONAL MEETINGS**

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

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

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

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

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

Gao, W. 2010. Co-chaired, session of Climate Change Challenges for the U.S. and China, Presented research outcomes on climate change effects on agriculture crops, during the International Colloquium on China, September 8-10, Fort Collins, Colorado

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

**Gao, W.** 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. November 9-11, 2010, San Diego, California

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

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

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

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

Huang, B.M., A. Huang and **W. Gao.** 2007. Recent advances in U.S. hyper spectral infrared remote sensing. September 8, 16<sup>th</sup> China National Remote Sensing Symposium, Beijing, China

- Gao, W.** 2007. Assimilation of satellite and ground observation, numerical and ecological models, and GIS to assess ecosystems. March 29, East China Normal University, Shanghai, China
- Gao, W.** 2006. Ecosystems assessment by using retrieved remote sensing data, regional climate model and DSSAT/GOSSYM models. July 12, 2006, Anhui Meteorological Bureau, Hefei, China
- Gao, W.** 2006. Study of climate-ecosystems interactions by using remote sensing, modeling and data assimilation. June 28, 2006, Hubei Meteorological Bureau, Wuhan, China
- Gao, W.,** and J.R. Slusser. 2006. The USDA UV-B Monitoring and Research Program Research and Products. April 19-21, Dunedin, New Zealand
- Grant, R.H., and **W. Gao.** 2006. The penetration of diffuse UV radiation into a maize canopy. *In: the 17<sup>th</sup> Conference of Biometeorology and Aerobiology, American Meteorological Soc.* May 21-24, San Diego, California
- 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. *In: 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,* 31 July-4 August 2005, San Diego Convention Center, San Diego, California
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- Gao, W.** 2005. Evaluate climate impact on ecosystems by using the method of remote sensing, climate model and ecosystems model coupling. Peking University, Beijing, May 23, 2005
- Gao, W.** 2004. Assimilation of Observations, Functional Models, and GIS to Study Climate-Ecosystem Interactions. *Bio-Environmental Complexity + Computational Sciences = High Performance Computing Colloquium*, Washington, DC, December 16, 2004
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Sullivan, J.H. and **W. Gao**. 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, 5-9 July 2003, Baltimore, Maryland, USA*

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