

## **CURRICULUM VITA**

**Wei Gao, Ph.D.**

### **ADDRESS**

USDA UV-B Program Office  
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### **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

(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 Effect, 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 Initiatives, Office of International Programs at Colorado State University

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

Associate Editor-In-Chief, *Frontiers of Earth Science*

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)

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

Member, the SPIE Presidential Asia Advisory Committee

Member, the SPIE Symposia Committee

Member, the SPIE Publication Committee

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

Member, CSU-China International Discover Initiative Advisory Board

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

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

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**

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:**

(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, \$1,500,000

(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) 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, \$5000
- (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 Seminar Committee  
 CSU NREL Graduate Award Committee  
 CSU the GDPE Review Committee

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

#### **GRADUATE STUDENTS:**

Current Graduate Advisees:  
 Chen, Maosi (PhD)  
 Li, Zhihua (PhD)  
 Liu, Ke (PhD)  
 Shi, Qingsan (PhD)  
 Xie, Xiaoping (PhD)

Past 5 years

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

**POSTDOCTORAL RESEARCHERS:**

Current:

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

**OTHER ACTIVITIES/ACCOMPLISHMENTS**

Advisor, Overseas Consultant Committee of Overseas Chinese Affairs Office of the State Council, China

Guest Professor, Peking University, Beijing, China

Adjunct Professor, the Department of Plant and Soil Sciences, Mississippi State University

Adjunct Professor, Nanjing University of Information Science and Technology; East China Normal University; Xinjiang University; China Institute of Water Resources & Hydropower Research

Director, The Joint Laboratory of Environmental Remote Sensing and Data Assimilation, CSU-ECNU-CAS

Director, The CSU-PKU Joint Laboratory for Remote Sensing of Ecological Environments at Peking University, China

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. Schmoldt, J.R. Slusser, 2009, UV Radiation in Global Climate Change: Measurements, Modeling and Effects on Ecosystems, Springer-Verlag and Tsinghua University Press, (in press)

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

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

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

**Gao, W.**, and S. Ustin, 2007, Remote Sensing and Modeling of Ecosystems for Sustainability III, 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:

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* (in press)

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

Smith, W. K., **W. Gao**, 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*, Vol.133-2, 363-372

Lantz, K., P. Disterhoft, J. Slusser, **W. Gao**, J. Berndt, G. Bernhard, R. Booth, J. Ehranjian, 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 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

Zhao, D., K.R. Reddy, V.G. Kakani, A.R. Mohammed, J.J. Read and **W. Gao**, 2004, Photosynthetic characteristics of cotton (*Gossypium hirsutum L.*) plants as affected by elevated CO<sub>2</sub> and UV-B radiation. *J. of Plant Physiology*, Vol. 161, 581-590

**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. *J. Agric. Forest Meteorol*, Vol. 120, 141-152

**Gao, W.**, Y.F. 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. *J. Agric. Forest Meteorol*. Vol. 120, 241-248

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). *J. Geophysical Research*, Vol. 108, 4046-4055

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. *J. Agric. Forest Meteorol*. Vol. 120, 161-176

Heisler, G.M., R.H. Grant and **W. Gao**, 2003, Individual- and scattered-tree influences on ultraviolet irradiance. *J. Agric. Forest Meteorol*, Vol. 120, 113-126

Heisler, G.M., R.H. Grant, **W. Gao** and J.R. Slusser, 2003, Ultraviolet radiation and its impacts on agriculture and forests. *J. Agric. Forest Meteorol*. Vol. 120, 3-8

Grant, R.H., G.M. Heisler, **W. Gao**, and Matthew Jenks, 2003, Ultraviolet Leaf Reflectance of Common Urban Trees and the Prediction of Reflectance from Leaf Surface Characteristics. *J. Agric. Forest Meteorol*. Vol. 120, 127-140

Zheng Y.F., **W. Gao**, J.R. Slusser, R.H. Grant and C.H. Wang, 2003, Yield and yield formation of field winter wheat in response to supplemental solar ultraviolet-B radiation. *J. Agric. Forest Meteorol*. 120, 279-284

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. *J. Agric. Forest Meteorol*. 120, 249-265

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, 37-71

**Gao, W.**, R.H. Grant, G. M. Heisler, and J. R. Slusser, 2002, A Geometric UV-B Radiation Transfer Model Applied to Vegetation Canopies. *Agronomy Journal*. Vol. 94 (3), 475-482

Grant, R.H., G. M. Heisler, and **W. Gao**, 2002, Estimation of Pedestrian Level UV Exposure Under Trees. *Journal of Photochemistry and Photobiology*. Vol. 75 (4), 369-376

**Gao, W.**, J. R. Slusser, J. Gibson, G. Scott, D. S. Bigelow, J. Kerr, and B. McArthur, 2001, Direct-Sun Column Ozone Retrieval by the UV Multi-filter Rotating Shadow-Band Radiometer and Comparison with Those from Brewer and Dobson Spectrophotometers. *Appl. Opt.* Vol. 40 (19), 3149-3155

Chameides, W.L., M. Bergin, X. Zhou, L. Mearns, **W. Gao**, C.S.Kiang, R. D.Saylor, A. Steiner, and F. Fiorgi, 1999, Case Study of the Effects of atmospheric aerosols and regional haze on agriculture: An opportunity to enhance crop yields in China through emission controls? *National Academy of Sciences*. Vol 96. 13626-13633

Grant, R.H., G.M. Heisler, and **W. Gao**, 1997, Clear sky radiance distributions in ultraviolet wavelength bands. *J. Theor. and Applied Climatol.* Vol. 56, 123-135

Grant, R.H., **W. Gao**, and G.M. Heisler, 1997, Ultraviolet sky radiance distributions of translucent overcast skies. *J. Theor. and Applied Climatol.* Vol. 58, 129-139

Grant, R.H., **W. Gao**, and G.M. Heisler, 1996, Photosynthetically-active radiation: sky radiance distributions under clear and overcast conditions. *J. of Agric. Forest Meteorol.* Vol. 82, 267-292

#### **Non-Refereed Journal Articles:**

**Gao, W.**, and J.R. Slusser, 2001, Ultraviolet-B Radiation Measurements and Research. *CIRA Newsletter*, Vol.16 (2), 8-9

#### **Refereed Chapters in Books:**

**Gao, W.**, Z.Q. Gao, and N.B. Chang, 2009, Comparative Analysis of UVB between Nimbus 7/TOMS Satellite Estimates and Ground-based Measurements, In: *UV Radiation in Global Change: Measurements, Modeling and Effects on Ecosystems*, Springer-Verlag and Tsinghua University Press (in press)

**Gao, W.**, J. Davis, R. Tree, X. Wang, J. Slusser, and D. Schomldt, 2009, An Ultraviolet Radiation Monitoring and Research Program for Agriculture, In: *UV Radiation in Global Climate Change: Measurements, Modeling and Effects on Ecosystems*, Springer-Verlag and Tsinghua University Press (in press)

**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: *Earth Science Satellite Remote Sensing II*, J. Qu, W. Gao, M. Kafatos, R. Murphy and V. Salomonson (eds). Springer-Verlag and Tsinghua Univ. Press, 395-406

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

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

**Gao, W.**, George Janson, 2008 Western Association of Agricultural Experiment Station Directors (WAAESD) Spring Meeting, March 17-20, presented the program's National Research Support Project (NRSP) proposal, "USDA UV-B Monitoring and Research Program: Enhancement of Network Data Products, Research Support, and National Research Collaboration." The NRSP proposal was also presented in Knoxville, TN, at the 2008 Southern Association of Agricultural Experiment Station Directors (SAAESD) Spring Meeting, March 31-April 2.

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