

Maosi Chen

USDA UV-B Monitoring and Research Program
Natural Resources Ecology Laboratory
Colorado State University, Fort Collins, CO 80523-1499
Phone: 970-491-3604
Email: maosi.chen@colostate.edu

Education

PhD, December 2015, Graduate Degree Program in Ecology, Colorado State University, Fort Collins, Colorado, US.

Dissertation: *Improving radiation data quality of USDA UV-B Monitoring and Research Program and Evaluating UV decomposition in DayCent and its ecological impacts*

Advisors: Dr. Wei Gao and Dr. John Davis

MS, July 2009, Cartography and Geographical Information System, Institute of Geographic Sciences and Natural Resources Research, CAS, Beijing, China

Thesis: *Crop classification using MODIS EVI series in North China*

Advisor: Dr. Zhiqiang Gao

BS, July 2006, Information Management and Information System, China Agricultural University, Beijing, China

Research Experience

Developing a two-stage reference spectral channel calibration method for pairs of collocated UV-MFRSR and MFRSR instruments (IDL);

Developing a global pairing cloud screening algorithm for direct normal measurements (IDL);

Detecting the performance abnormality of the Langley and Lamp calibrated irradiance using MODTRAN radiative transfer model (IDL);

Writing a wrapper of a time zone identifying function of GDAL (Geospatial Data Abstraction Library) for IDL access (C);

Developing a global optimization algorithm combining the scatter search framework and the trust region non-linear local optimizer for the DayCent model (C++ and PERL);

Writing an OpenMP wrapper for the kernel of the TUV radiation transfer model in the spectral dimension to speed up the optimization process using TUV as the forward model (C++ and FORTRAN);

Developing a static FORTRAN variable usage analysis program (PERL, FORTRAN);

Developing a crop classification algorithm in the North China Plain using MODIS EVI time series data (IDL/ENVI);

Writing scripts for automatic TM/ETM+ image cropping near over 100 observation sites (EML, ERDAS Macro Language); and

Applying the mono-window algorithm to retrieve the land surface temperature from Landsat TM data in Kenli, China (AML, ARC Macro Language).

Publications

Chen M, Davis J, Sun Z, Gao W (2015), Two-stage reference channel calibration for collocated UV and VIS Multi-Filter Rotating Shadowband Radiometers. *Proceeding SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability XII*: 96100L. doi:10.1117/12.2185500

Chen M, Davis J, Gao W (2014), A New Cloud Screening Algorithm for Ground-Based Direct-Beam Solar Radiation. *Journal of Atmospheric and Oceanic Technology*, 31(12): 2591-2605. doi: 10.1175/JTECH-D-14-00095.1

Liu C, Chen M, Shi R, Gao W (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

Chen M, Davis J, Tang H, Ownby C, Gao W (2013), The calibration methods for Multi-Filter Rotating Shadowband Radiometer: a review. *Frontiers of Earth Science*, 7(3): 257-270. doi: 10.1007/s11707-013-0368-9

Liu C, Chen M, Gao W (2013), Validation of aerosol optical depth and total ozone column in the ultraviolet retrieved from multifilter rotating shadowband radiometer. *Proceeding SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability X*: 886918. doi: 10.1117/12.2021709

Tang H, Chen M, Davis J, Gao W (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

Wu D, Chen M, Wang Q, Gao W (2013), Algae (*Microcystis* and *Scenedesmus*) absorption spectra and its application on Chlorophyll a retrieval. *Frontiers of Earth Science*, 7(4), 522-530. doi: 10.1007/s11707-013-0373-z

Chen M, Davis J, Tang H, Gao Z, Gao W (2012), A multi-channel calibration method for multi-filter rotating shadow-band radiometer. *Proc SPIE 8513. Remote Sensing and Modeling of Ecosystems for Sustainability, IX*: 851305. doi:10.1117/12.929454

Zhao C, Bao Y, Chen M, Huang W, Liu L (2012), Use of Landsat TM and EOS MODIS imaging technologies for estimation of winter wheat yield in the North China Plain. *International Journal of Remote Sensing*, 33(4): 1029-1041. doi: 10.1080/01431161.2010.549849

Chen M, Gao Z, Gao W (2009), Crop classification using MODIS EVI series in North China. *Proceeding SPIE, Remote Sensing and Modeling of Ecosystems for Sustainability VI*: 74541D. doi: 10.1117/12.825795

Conference Presentations

Chen M, Davis J, Sun Z, Gao W (2015), Two-stage reference channel calibration for collocated UV and VIS Multi-Filter Rotating Shadowband Radiometers. Oral Presentation at the Conference of Remote Sensing and Modeling of Ecosystems for Sustainability XII, as Part of International Symposium on Optical Science and Technology (10-13 August 2015).

Chen M, Davis J, Tang H, Gao Z, Gao W (2012), A multi-channel calibration method for multi-filter rotating shadow-band radiometer. Oral Presentation at the Conference of Remote Sensing and Modeling of Ecosystems for Sustainability IX, as Part of International Symposium on Optical Science and Technology (12-16 August, 2012).

Chen M, Gao Z, Gao W (2009), Crop classification using MODIS EVI series in North China. Poster Presentation at the Conference of Remote Sensing and Modeling of Ecosystems for Sustainability VI, as Part of International Symposium on Optical Science and Technology (2-6 August, 2009).

Workshop

As a teaching assistant, I attended a one day workshop, Understanding and Exploring LANDSAT 8 in ENVI sponsored by Exelis in Boulder, Colorado on September 25.