



INSTITUTE OF AGRICULTURAL RESOURCES
AND REGIONAL PLANNING, CAAS

Gao Maofang



Professor



Ph.D Supervisor



86-10-82106851



gaomaofang@caas.cn



Innovation Team of Agriculture Green Development Science and Engineering, IARRP, CAAS



Ziyuan Building, 12 Zhongguancun Nandajie Street, Haidian District, Beijing, China

Research Interests

- Agricultural remote sensing
- Chlorophyll fluorescence remote Sensing
- Assimilation of crop model and remote sensing
- Carbon and nitrogen cycle simulation
- Greenhouse gas emission and climate change

Publication

Long-term crop mapping in the three provinces of Northeast China based on multi-source sample fusion, Scientific Data, 2026, DOI: 10.1038/s41597-026-07846-4

Global retrieval of GOME-2 sun-induced chlorophyll fluorescence via neural networks trained on mixed-pixel simulations, International Journal of Applied Earth Observation and Geoinformation, 2026, DOI: 10.1016/j.jag.2026.105373

A Novel Domain Adaptation with Multiple Classifiers for Crop Mapping, Computers and Electronics in Agriculture, 2026, DOI: 10.1016/j.compag.2026.111450

Pixel scale spatiotemporal patterns of agricultural water and land resources carrying capacity guide precision resource management, Computers and Electronics in Agriculture, 2025, DOI: 10.1016/j.compag.2025.110455

A reflectance reconstruction method to retrieve full-spectrum sun-induced chlorophyll fluorescence from canopy measurements, IEEE Transactions on Geoscience and Remote Sensing, 2024, DOI: 10.1109/TGRS.2024.3485576



Integrating remote sensing assimilation and SCE-UA to construct a grid-by-grid spatialized crop model can dramatically improve winter wheat yield estimate accuracy, Computers and Electronics in Agriculture, 2024, DOI: 10.1016/j.compag.2024.109594

A deep learning framework for crop mapping with reconstructed Sentinel-2 time series images, Computers and Electronics in Agriculture, 2023, DOI: 10.1016/j.compag.2023.108227

An efficient and precise multi-layer pyramid crop classification network for remote sensing images, Computers and Electronics in Agriculture, 2023, DOI: 10.1016/j.compag.2023.108065

Winter wheat chlorophyll content retrieval based on machine learning using in situ hyperspectral data, Computers and Electronics in Agriculture, 2022, DOI: 10.1016/j.compag.2022.106728

Hyperspectral inversion of nitrogen content in maize leaves based on different dimensionality reduction algorithms, Computers and Electronics in Agriculture, 2021, DOI:10.1016/j.compag.2021.106461

Carbon emissions inventory of farm size pig husbandry combining Manure-DNDC model and IPCC coefficient methodology, Journal of Cleaner Production, 2021, DOI: 10.1016/j.jclepro.2021.128854

Uncertainty analysis of SVD-based spaceborne far-red sun-induced chlorophyll fluorescence retrieval using TanSat satellite data, International Journal of Applied Earth Observation and Geoinformation, 2021, DOI:10.1016/j.jag.2021.102517

Influence of adjacency effect on high-spatial-1 resolution thermal infrared imagery: Implication for radiative transfer simulation and land surface temperature retrieval, Remote Sensing of Environment, 2020, DOI:10.1016/j.rse.2020.111852

Impact of 3-D Structures and Their Radiation on Thermal Infrared Measurements in Urban Areas, IEEE Transactions on Geoscience and Remote Sensing , 2020, DOI:10.1109/TGRS.2020.2987880

Hyperspectral Estimation of Soil Organic Matter Content using Different Spectral Preprocessing Techniques and PLSR Method, Remote Sensing, 2020, DOI:10.3390/rs12071206

Drought loss assessment combining remote sensing and a crop growth model for maize in Yunnan Province, China, International Journal of Remote Sensing, 2019, DOI:10.1080/01431161.2018.1519291

A practical approach for deriving all-weather soil moisture content using combined satellite and meteorological data, ISPRS Journal of Photogrammetry and Remote Sensing, 2017, DOI:10.1016/j.isprsjprs.2017.07.013

The development of China-DNDC and review of its applications for sustaining Chinese agriculture, Ecological Modelling, 2017, DOI:10.1016/j.ecolmodel.2017.01.003

Assessing impacts of alternative fertilizer management practices on both nitrogen loading and greenhouse gas emissions in rice cultivation, Atmospheric Environment, 2015, DOI:10.1016/j.atmosenv.2015.08.060

Modeling nitrogen loading from a watershed consisting of cropland and livestock farms in China using Manure-DNDC, Agriculture, Ecosystems & Environment, 2014, DOI:10.1016/j.agee.2013.10.023

Calibration of DNDC model for nitrate leaching from an intensively cultivated region of Northern China, Geoderma , 2014, DOI:10.1016/j.geoderma.2014.01.002



INSTITUTE OF AGRICULTURAL RESOURCES
AND REGIONAL PLANNING , CAAS

Remote Sensing of Agro-droughts in Guangdong Province of China Using MODIS Satellite Data, Sensors, 2008, DOI:10.3390/s8084687

Drought monitoring and early warning in the eastern Mongolian Plateau, Beijing/China Agricultural Science and Technology Press, 2019, ISBN:978-7-5116-4459-6

Estimation of evapotranspiration and drought losses based on multi-source data, Beijing/China Agricultural Science and Technology Press, 2018, ISBN:978-7-5116-3812-0

Retrieval of land surface temperature in China based on MODIS data, Beijing/China Agricultural Science and Technology Press, 2017, ISBN:978-7-5116-3343-9

Nitrogen removal potential and influencing factors of aquatic plants in ditches, Beijing/China Agricultural Science and Technology Press, 2016, ISBN:9787511628145

Study on Atmospheric Water Vapor and Surface Temperature Retrieved from Multi-source Remote Sensing, Beijing/China Agricultural Science and Technology Press, 2016, ISBN:9787511626752

Simulation of nitrogen pollution from agricultural non-point sources at watershed scale, Beijing/China Agricultural Science and Technology Press, 2015, ISBN:9787511621481

Simulation of livestock and poultry breeding and waste disposal process, Beijing/China Agricultural Science and Technology Press, 2015, ISBN:978-7-5116-2255-6