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EDUCATION:

Visiting Scholar Department of Geography, University of Connecticut, 2010.09-2011.03
PhD Soil Science, Institute of Soil Sciences, Chinese Academy of Sciences, 2001-2004
MA Soil and water conservation, Institute of Soil Sciences, Chinese Academy of Sciences, 1998-2001
BA Soil and plant nutrition, Nanjing Agricultural University, 1995-1998

ACADEMIC AND RESEARCH EXPERIENCE:

2015.12-2016.12, (presided at) the construction of soil samples library of Fujian, China, supported by institute of soil science, Chinese academy of sciences

2013.01-2016.12, (presided at) mixed geographically weighted regression model for spatial estimation of soil properties, supported by National Natural Science Foundation.

2012.1-2015.12, (presided at) prediction model for soil nutrition variation in space, supported by natural science foundation of Fujian province, China.

2005.06-2008.12, (presided at) integration methods of soil database at intermediate scale in a case study at north and south China, supported by State Key Lab. of Soil and Sustainable Agriculture.

2005.06-2008.6, (presided at) Effect of urban runoff on internal river pollution, a case study of Fuzhou, Fujian, China, supported by Natural Science Foundation of Fujian province, China.

2002.9-2003.9, (partly participated in) National soil database construction at scale of 1:1000000 (SISChina), supported by Chinese Academy of Sciences.

2003.10-2004.7, (partly participated in) the research on temporal and spatial evolvement of soil erosion and its degraded mechanism, ‘973 project’, China

2004.1-2004.7, research on the storage of soil carbon and its spatial distribution, CIDA 2003.10-2004.7, (partly participated in) Sustainable farming at the Rural-urban Interface--An integrated knowledge based approach for nutrient and water recycling

in small-scale farming systems in peri-urban areas of China and Vietnam. European Union project.

CLASSES TAUGHT:

Computer Aided Design;

Principle of GPS and its Application;

Application of ARCGIS software;

Geographic Information System;

Field Practice of soil Geography;

Regional Analysis and Planning.

WORK-RELATED SKILLS

Experimental Skills

Regular chemical analysis, HPLC.

Field Skills

Techniques and experiences in investigation of soil and plant, watershed processes and water quality observation, soil sampling.

Familiar Software

ArcGIS, SPSS, Envi, AutoCAD.

RESEARCH INTERESTS

Soil properties spatial estimation model;

Soil environmental quality and its Evolution;

Soil Erosion and their environmental effects;

Digital Soil Mapping using DEM, related maps and other application of 3S (GIS, RS and GPS) approaches.

My current research is focused on mixed geographically weighted regression (MGWR), the purpose of the research is aim to construct accurate MGWR model for estimating soil properties, the contents including: 1) constructing a model which can deal with non-stationary and stationary parameters at the same time in a single GWR model, resolving regression coefficients from different means are applied in the process; 2) Sampling and data collection in two selected study areas (one represents little anthropic disturbance region, and the other represents frequent disturbance region by human beings), the collected soil samples are used to conduct the analysis for these soil properties, including soil organic matter, soil texture, available phosphorus, total nitrogen, CEC (Cation exchange Capacity), pH, Zn, Cr, Cd, Pb, Cu and other trace metals, and the data collected in the two study areas are included in DEM, TM image, soil erosion map, soil map, land use types, and their derived data. The spatial variation of each soil property is estimated in MGWR

model from various factor combinations. 3) Different approaches, including ordinary Kriging, regress Kriging, CoKriging, OLS, are used to compare the results gotten from MGWR/GWR for above mentioned soil properties in accuracy, mapping effect, availability of the application and their limitation. 4) How to quantify some qualitative factors, such as soil type, land uses, slope, aspect etc. is also conducted. Through these researches, we conclude that MGWR/GWR approach can employ environmental factors that impact greatly on soil properties as much as possible to conduct these estimations. For most of soil properties, the approach can obtain better accuracy and mapping effects, it can applied in most of soil properties that influenced greatly by environmental factors.

PEER-REVIEWED PUBLICATIONS IN RECENT YEARS

Wang, K., Zhang, C., Li, W. Lin, J., & Zhang, D. X. Mapping Soil Organic Matter with Limited Sample Data Using Geographically Weighted Regression. Journal of Spatial Science, 2013, 10: 1-16. http://dx.doi.org/10.1080/14498596.2013.812024.

Wang, K. Spatial Estimation of Soil Organic Matter by Using Geographically Weighted Regression Model (in Chinese). Chinese Journal of Soil Science, 2013, 44(1): 21-27.

Wang K., Jiang Z. L. Accuracy Analysis of Kriging with Local Regression Residuals on Soil Cation Exchange Capacity (in Chinese), Journal of Jiangxi agricultural university, 2013, 177(1): 195-203.

Wang, K. Application of Regression Kriging on the Spatial Prediction of Total Soil Nitrogen (in Chinese). Chinese Agricultural Science Bulletin, 2013, 29 (20):142-147.

Wang, K. Application of Geographically Weighted Regression on the Spatial Prediction of Soil pH (in Chinese), Journal of Hunan agricultural university, 2013, 39(1): 73-79.

Wang, K., Zhang, C., & Li, W. Predictive mapping of soil total nitrogen at a regional scale: a comparison between geographically weighted regression and cokriging. Applied Geography, 2013, 42: 73-85

Wang, K., Ding, H. Analysis the Spatial Distribution of Total Nitrogen and Phosphorus in Urban Runoff (in Chinese). Journal of Subtropical Resources and Environment, 2012, 7(3): 20-25.

Wang, K., Zhang, C., & Li, W. Comparison of Geographically Weighted Regression and Regression Kriging for Estimating the Spatial Distribution of Soil Organic Matter, GIScience & Remote Sensing, 2012, 49: 915-932.

Wang, K., Wu, W.Y., Chen, Y. Q., Ding, H. Study on non-point pollution characteristics of urban runoff in Fuzhou city (in Chinese), Journal of Minjiang university, 2009, 30(2):107-111

Wang K., Shi X.Z., Yu D.S. et al. Landscape analysis of dynamic soil erosion in Subtropical China: A case study in Xingguo County, Jiangxi Province. Soil and Tillage Research, 2009, 105:313-321

Wang K., Shi X. Z., Yu D.S., Lian Y. Shi D.M. 2005. Environmental Factors Affecting Temporal and Spatial Dynamics of Soil Erosion in Xingguo County, South China, PEDOSPHERE, 15(5):620-627

Wang K., Shi X.Z.,Yu D.S., Tian Q.J. 2006. Relationship between LAI and distributional character of soil erosion in hilly red soil regions (in Chinese), Journal of Ecology & Environment, 15(5):1052-1055

Wang K., Shi X. Z, Yu D.S., 2006. Soil Erosion Characteristics under Different Land Use Types in hilly Red Soil Regions, Journal of Southwest Agricultural University (Natural Science) (in Chinese), 28(5):697-701

Shi X.Z, Wang K. Yu D.S., et al. 2008. Relationship between soil erosion and distance to roadways in undeveloped areas of China, Catena, 72(2): 305-313

Wang K., Wu W.Y., Chen Y.Q., 2009. Ding H. Study on non-point pollution characteristics of urban runoff in Fuzhou City (in Chinese). Journal of Minjiang University, 30(2):107-111

WANG K., SHI X.Z., YU D.S., ZHANG D.X., WANG H.J., SUN W.X. 2009. Application of MCE method in soil erosion risk evaluation (in Chinese), Ecology and Environmental Sciences, 18(3): 1077-1082

MEMBERSHIP AND SERVICE TO PROFESSIONAL SOCIETIES

Society of Cartology & GIS, Fujian, China, (member since 2004)
Society of Physical Geography, Fujian, China, (member since 2005)
Reviewer for Applied Geography, Catena, Geoderma, Journal of agriculture of science, and related journals in Chinese