

CURRICULUM VITAE

Weidong Li

Contact

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Work

2008- Department of Geography, University of Connecticut, Connecticut
 Research professor
2008-2011 Department of Information Engineering, Huazhong Agricultural University, Wuhan, China
 Distinguished Professor
2006-2008 Department of Geography, Kent State University, Ohio
 Adjunct assistant professor, research scientist
2003-2005 Department of Geography, University of Wisconsin – Madison, Wisconsin
 Assistant scientist
2000-2001 Faculty of Civil Engineering, Israel Institute of Technology, Haifa, Israel
 Postdoctoral Researcher
1998-1999 Institute for Land and Water Management, Catholic University of Leuven, Belgium
 Postdoctoral Researcher
1997-1998 Institute of Geography, Chinese Academy of Science, Beijing, China
 Associate professor
1995-1997 Institute of Geography, Chinese Academy of Science, Beijing, China
 Postdoctoral researcher
1991-1992 Institute of Geography, Henan Academy of Science, Zhengzhou, China
 Research associate

Education

PhD in Soil and Water Science, 1995, China Agricultural University, Beijing, China
MS in Computing, 2003, Marquette University, Milwaukee, Wisconsin
MS in Soil Geography, 1991, Huazhong Agricultural University, Wuhan, China
BS in Soil and Agro-chemistry, 1988, Huazhong Agricultural University, Wuhan, China

Research Interests

1. Geospatial statistics and analysis
2. Land use change and landscape ecology
3. Regional soil and environmental modeling
4. GIS and remote sensing
5. Computation and computer programming

Journal publications

1. Li, W., C. Zhang and D.K. Dey. 2011. Modeling experimental cross transiograms of neighboring landscape categories with the gamma distribution. *International Journal of Geographical Information Science* (In press).

2. Li, W. and C. Zhang. 2011. A Markov chain geostatistical framework for land-cover classification with uncertainty assessment based on expert-interpreted pixels from remotely sensed imagery. *IEEE Transactions on Geoscience and Remote Sensing*, 49(8): 2983-2992.
3. Zhang, B., W. Li, Y. Yang, S. Wang, and C. Cai. 2011. The Bayesian maximum entropy geostatistical approach and its application in soil and environmental sciences. *Acta Pedologica Sinica*, 48(4): 831-839. (In Chinese).
4. Yang, Y., W. Li, and L. He. 2011. Uniform expression of variogram nested model and parameter estimation in spatial prediction of soil properties. *Transactions of the CSAE*, 27(6): 85-89. (In Chinese).
5. Li, W., C. Zhang, D.K. Dey, and S. Wang. 2010. Estimating threshold-exceeding probability maps of continuous environmental variables with Markov chain random fields. *Stochastic Environmental Research and Risk Assessment*, 24(8): 1113-1126.
6. Zhang, C., T. Zhao, and W. Li. 2010. Automatic search of geospatial features for disaster and emergency management. *International Journal of Applied Earth Observation and Geoinformation*, 12(6): 409 - 418.
7. Zhang, C., T. Zhao, and W. Li. 2010. The framework for a geospatial semantic web based spatial decision support system for digital earth. *International Journal of Digital Earth*, 3(2): 111-134.
8. Li, W. and C. Zhang. 2010. Linear interpolation and joint model fitting of experimental transiograms for Markov chain simulation of categorical spatial variables. *International Journal of Geographical Information Science*, 24(6): 821-839.
9. Zhang, C., T. Zhao, W. Li, and J. Osleeb. 2010. Towards logic-based geospatial feature discovery and integration using web feature service and geospatial semantic web. *International Journal of Geographical Information Science*, 24(6): 903-923.
10. Li, W. and C. Zhang. 2010. Simulating spatial distribution of clay layer occurrence depth in alluvial soils with a Markov chain geostatistical approach. *Environmetrics*, 21(1): 21-32.
11. Zhang, C., W. Li, and D. Travis. 2009. Geostatistical restoration of clouded pixels in multispectral remotely sensed imagery. *International Journal of Remote Sensing*, 30(9): 2173-2195.
12. Zhang, C., Z-R. Peng, T. Zhao and W. Li. 2008. Transforming transportation data models from UML to OWL. *Journal of the Transportation Research Board: Transportation Research Record*, 2064: 81-89.
13. Zhang, C. and W. Li. 2008. Regional-scale modeling of the spatial distribution of surface and subsurface textural classes in alluvial soils using Markov chain geostatistics. *Soil Use and Management*, 24(3): 263-272.
14. Li, W. and C. Zhang, 2008. A single-chain-based multidimensional Markov chain model for subsurface characterization. *Environmental and Ecological Statistics*, 15(2):157-174.
15. Zhang, C. and W. Li. 2008. A comparative study of nonlinear Markov chain models in conditional simulation of categorical variables from regular samples. *Stochastic Environmental Research and Risk Assessment*, 22(2): 217-230.
16. Li, W. 2007. Markov chain random fields for estimation of categorical variables. *Mathematical Geology*, 39(3): 321-335.
17. Li, W. 2007. A fixed-path Markov chain algorithm for conditional simulation of discrete spatial variables. *Mathematical Geology*, 39(2): 159-176.
18. Li, W. 2007. Transiograms for characterizing spatial variability of soil classes. *Soil Science Society of America Journal*, 71(3): 881-893.
19. Li, W., and C. Zhang, 2007. A random-path Markov chain algorithm for simulating categorical soil variables from random point samples. *Soil Science Society of America Journal*, 71(3): 656-668.
20. Zhang, C., W. Li, and T. Zhao. 2007. Geospatial data sharing based on geospatial semantic web technologies. *Journal of Spatial Science*, 52(2): 11-25.
21. Zhang, C. and W. Li. 2007. Comparing a fixed-path Markov chain geostatistical algorithm with sequential indicator simulation in categorical variable simulation from regular samples. *GIScience & Remote Sensing*, 44(3): 251-266.
22. Zhang, C. Li, W. and Travis, D. 2007. Gaps-fill of SLC-off Landsat ETM+ satellite image using a geostatistical approach. *International Journal of Remote Sensing*, 28(22): 5103-5122
23. Hu, K. R. White, D. Chen, B. Li and W. Li. 2007. Stochastic simulation of water drainage at the field scale and its application to irrigation management. *Agricultural Water Management*, 89 (1-2): 123-130.
24. Li, W. 2006. Transiogram: A spatial relationship measure for categorical data. *International Journal of Geographical Information Science*, 20(6): 693-699.
25. Li, W., and C. Zhang. 2006. A generalized Markov chain approach for conditional simulation of categorical variables from grid samples. *Transactions in GIS*, 10(4): 651-669.

26. Zhang, C., W. Li and M. Day. 2006. Effective protected-area boundary designation in China using a web-based spatial decision support system. *Journal of Spatial Science*, 51(2): 33-46.
27. Li, W. and C. Zhang. 2005. Application of transiograms to Markov chain modeling and spatial uncertainty assessment of land cover classes. *GIScience & Remote Sensing*, 42(4): 297-319.
28. Li, W., C. Zhang, and J.E. Burt. 2005. A Markov chain-based probability vector approach for modeling spatial uncertainties of soil classes. *Soil Science Society of America Journal*, 69(6): 1931-1942.
29. Zhang, C. and W. Li. 2005. The roles of Web Feature and Web Map Services in real-time geospatial data sharing for time-critical applications. *Cartography and Geographical Information Science*, 32(4): 269-283.
30. Zhang, C., W. Li and M. Day. 2005. Towards establishing effective protective boundaries for the Lunan Stone Forest using an online spatial decision support system. *Acta Carsologica*, 34(1): 151-167.
31. Zhang, C. and W. Li. 2005. Markov chain modeling of multinomial land-cover classes. *GIScience & Remote Sensing*, 42(1): 1-18.
32. Li, W., C. Zhang, J.E. Burt, and J. Feyen. 2004. Two-dimensional Markov chain simulation of soil type spatial distribution. *Soil Science Society of America Journal*, 68(5): 1479-1490.
33. Zhang, C., W. Li, M. Day and Z.-R. Peng. 2003. GML-based interoperable geographical databases. *Cartography*, 32(2): 1-16.
34. Zhang, C., M. Day and W. Li. 2003. Land use and land cover change in the Lunan Stone Forest, China. *Acta Carsologica*, 32(2): 161-174.
35. Li, W., B. Li, Y. Shi, D. Jacques, and J. Feyen. 2001. Effect of spatial variation of textural layers on regional field water balance. *Water Resources Research*, 37(5): 1209-1219.
36. Li, W., B. Li and Y. Shi. 1999. Markov-chain simulation of soil textural profiles. *Geoderma*, 92(1, 2): 37-53.
37. Li, W., B. Li and Y. Shi, 1999. Stochastic simulation models for regional field soil textural profiles. *Acta Pedologica Sinica*, 36(3): 289-300. (In Chinese)
38. Li, W., B. Li and Y. Shi. 1999. Application of Markov-chain theory to quantitatively describe the vertical change of textural layers in regional alluvial soils. *Acta Pedologica Sinica*, 36(1): 15-24. (In Chinese)
39. Li, B., W. Li and Y. Shi, 1998. Some distribution characteristics of regional soil textural layers in an alluvial plain. *Acta Pedologica Sinica*, 35(4): 433-440. (In Chinese)
40. Li, W., B. Li, Y. Shi and D. Tang, 1997. Application of the Markov chain theory to describe spatial distribution of textural layers. *Soil Science*, 162(9): 672-683.
41. Li, W., 1997. Progress of studies on equilibration of water, nitrogen and carbon cycling in terrestrial ecosystem. *Progress in Geography*, 16 (supplement): 15-20. (In Chinese)
42. Li, W., D. Tang, Q. Wang and B. Yang, 1997. Moisture physical properties of Black Clay Soils and amelioration measures. *Scientia Agricultura Sinica*, 30(6): 30-35. (In Chinese)
43. Li, W., Q. Wang and B. Yang, 1996. Components and characteristics of humic substances in Black Clay Soils. *Journal of Huazhong Agricultural University*, 15(6): 527-533. (In Chinese)
44. Li, W., Q. Wang and B. Yang. 1996. Characteristics of humic substances and their relationships with genesis of Black Clay Soils in warm temperature zone of China. *Acta Pedologica Sinica*, 33(4): 433-438. (In Chinese)
45. Li, W., B. Li, and Y. Shi. 1996. Stochastic simulation of regional alluvial soil textural profiles and its application in soil water transformation (Briefing). *Journal of China Agricultural University*, 1(5): 46, 62. (In Chinese)
46. Li, W. and Q. Wang, 1994. Components of clay minerals and discussion on the origin of smectite in Black Clay Soils. *Acta Agriculturae Universitatis Pekinensis*, 20(2): 192-196. (In Chinese)
47. Li, W. and Q. Wang, 1993. Morphological features of Black Clay Soils in China. *Journal of Huazhong Agricultural University*, 12(3): 245-249. (In Chinese)
48. Cheng, R., W. Li, and Y. Ai, 1993. Soil nutrition status and forest growth conditions in Shennongjia Mountain Region. *Chinese Journal of Soil Science*, 24(1): 11-13. (In Chinese)

Other publications

49. Zhang, B., W. Li, Q. Huang, and S. Wang. 2011. Risk assessment of soil Cd exceedance in the Wuhan Donghu Hgh-tech Developing Zone by disjunctive kriging. *The International Conference on Remote Sensing, Environment and Transportation Engineering* (RSETE 2011), June 24-26, 2011, Nanjing, China. (In Chinese).

50. Qu, M., W. Li, L. He, S. Wang, S. Li, and J. Ba. 2011. Integration of categorical information of land use maps in spatial prediction of soil available Cu in Hanchuan County, China. *The International Conference on Remote Sensing, Environment and Transportation Engineering (RSETE 2011)*, June 24-26, 2011, Nanjing, China. (In Chinese).
51. Li, W and C. Zhang. 2010. Quantification of spatial uncertainty in categorical fields. *The International Workshop on Advances in Spatial Statistics and Intelligence*. June 22-23, 2010, Wuhan, Hubei, China.
52. Zhang, B., Y. Yang, W. Li, M. Qu and S. Wang. 2010. Multivariate and geostatistical analysis of soil heavy metals in the urban-rural transition zone of Wuhan. *Conference on Environmental Pollution and Public Health (CEPPH 2010)*, September 10-12, 2010, Wuhan, China. (In Chinese).
53. Zhang, C. and W. Li. 2010. Challenges for developing a Geospatial Semantic Web for automatic search of geospatial features. *Geoinformatics 2010*, June 18-20, Beijing, CD-Room.
54. Li, W. and C. Zhang. 2010. Geostatistical mapping of threshold-exceeding probabilities of environmental pollutants. *The Workshop on Pollution Remediation and Process Control in International Petroleum Industry*, Sept. 27-29, Beijing. (In Chinese).
55. Li, W. and C. Zhang. 2009. Markov chain analysis. *International Encyclopedia of Human Geography*, 6: 455-460.
56. Zhang, C. and W. Li. 2009. Towards spatial data discovery and integration using Geospatial Semantic Web techniques. *The 6th International Symposium on Digital Earth (ISDE6)*. Sept. 9-12, 2009. Beijing, China, CD-Room.
57. Zhang, C. and W. Li. 2009. Markov chain simulation of land cover classes with spatial uncertainty assessment. *Proceedings of MultiTemp 2009 - The Fifth International Workshop on the Analysis of Multi-temporal Remote Sensing Images*, July 28-30, 2009 - Groton, Connecticut.
58. Zhang, C., T. Zhao, and W. Li. 2008. An interoperable spatial decision support system based on geospatial semantic web technologies. *Proceedings of SPIE*, Vol. 7144, 71442B (2008); DOI:10.1117/12.812831; *Geoinformatics 2008 and Joint Conference on GIS and Built Environment: The Built Environment and Its Dynamics*, June 28-29, Guangzhou, 2008.
59. Li, W. and C. Zhang. 2008. Mapping the probabilities of soil clay layer thickness exceeding some threshold values with Markov chain geostatistics. *GIScience 2008*, Park City, UT, Sept 23-26, 2008, edited by Thomas J. Cova, Harvey J. Miller, Kate Beard, Andrew U. Frank, Michael F. Goodchild, pp. 270-274.
60. Li, W. and C. Zhang. 2008. Simulating the vertical two-dimensional structures of alluvial soil textural layers from borehole observations. *Proceedings of 3rd Global Workshop on Digital Soil Mapping*, Logan, UT, Sept 30 - Oct 3, 2008.
61. Li, W., and C. Zhang, 2007. The nonlinear Markov chain geostatistics. *Proceedings of IAMG 2007, Geomathematics and GIS Analysis of Resources, Environment, and Hazards, IAMG 2007 Annual Conference*. Aug. 26-31, Beijing, China. pp. 573-578.
62. Li, W., and C. Zhang, 2007. A middle-insertion algorithm for Markov chain simulation of soil layering. *Proceedings of ACMGIS 2007, 15th ACM International Symposium on Advances in Geographic Information Systems*, Nov. 7-9, 2007, Seattle, USA. pp. 328-331.
63. Li, W. and C. Zhang. 2006. Visualizing spatial uncertainty of multinomial classes in area-class mapping. *AutoCarto 2006*, June 26-28, Vancouver, Washington, 13 pages. <http://www.cartogis.org/publications/autocarto-2006/lizhang.pdf/view>.
64. Zhang, C. and W. Li. 2004. Predictive area class mapping of multinomial land-cover categories using Markov chains. pp. 239-242. *GIScience 2004 - The Third International Conference on Geographic Information Science*.
65. Zhang, C., Z.-R. Peng, W. Li, and M. Day. 2003, GML-based interoperable geographical databases. *UCGIS Summer Assembly 2003*. University Consortium of Geographic Information Science.
66. Li, W., D. Jacques and J. Feyen, 1999, Application of Markov-chain simulation of soil textural profiles to regional field-water balance. In: J. Feyen and K. Wiyo (ed) *Modeling of Transport Processes in Soils at Various Scales in Time and Space*. pp. 693-700. Wageningen: Wageningen Press.
67. Li, W. and D. Tang, 1997. Relationship between regional agricultural integrated exploitation and agricultural sustainable development in North China Plain. *Chinese Youth Agricultural Science Academic Annual, Collection A*. pp. 824-829. (In Chinese)
68. Li, W. and F. Yuan, 1997, Observation and study of some moisture physical properties in Black Clay Soils (article). In: Soil Science Association of Chinese Youth (ed), *Soil and Plant Nutrition Sciences toward 21 Century*. pp. 40-45. Beijing: China Agri. Press. (In Chinese)

69. Li, W. and D. Tang, 1996. Relationship between regional agricultural integrated exploitation and agricultural sustainable development in North China Plain. *Symposium on Agricultural Development in Huang-Huai-Hai Plain*. (In Chinese)
70. Li, W., B. Li and Y. Shi, 1995, Progress of studies on field spatial variability and soil water transfer models (article). In: Y. Shi et al., (ed), *Progress of Studies on Applied and Fundamental Theories of Water-saving Agriculture*. pp. 64-71, Beijing: China Agri. Press. (In Chinese)
71. Li, W., B. Li and Y. Shi, 1995. Spatial probability distribution characteristics of soil textural layer thickness, first clay layer emerging depths and soil textural types in North China Plain. In: Y. Shi et al., (ed), *Studies on Water-saving Agriculture in North China Plain*. (In Chinese)
72. Li, W. and Q. Wang, 1993, Genetic characteristics and systematical classification of Chinese Shajiang Black Soils (presentation and article). In: Editor Committee of Chinese Soil Taxonomy (ed), *Progress of Studies on Chinese Soil Taxonomy*, pp. 263-266. Beijing: Science Press. (In Chinese)
73. Li, W. and Q. Wang, 1992, A discussion on the parent material origin of black soil horizon in Shajiang Black Soils. In: Z. Gong, (ed), *Environment Change of Soils*. pp. 75-78. Beijing: China Science and Technology Press. (In Chinese)

Books

74. Tang, D., W. Li, and W. Cheng (eds). 1997. *Sustainable Agricultural Development in Huang-huai-hai Plain* (article collection). Meteorology Press, Beijing, China. (In Chinese)