

插值模型、农作物洪涝脆弱性模型和非参数核密度的信息扩散模型,开展了以县、月为单元的小时空尺度下农作物洪涝风险评估研究,并在评估结果的基础上探讨了风险的时空差异特征。本研究是一个全新的尝试,它为灾害样本严重不足情况下的小时空尺度风险评估提供了一个解决方案。

另一方面,在研究中发现,农作物洪涝脆弱性模型是整个风险评估的关键,本研究仅建立了单变量(降雨量)与受灾率之间的回归关系,关系合理但并不理想。在接下来的研究中,作者将会深入探讨如何建立多因子农作物洪涝脆弱性关系模型来进一步完善风险评估。

致谢

本研究得到了国家自然科学基金项目(40901274)的资助。

参考文献

1. Zhang Qiao and Wang Ke, Methods and models in risk analysis of crops' production, *Agricultural Outlook*, 8 (2007) 7-10
张峭, 王克. 农作物生产风险评估的方法和模型[J]. *农业展望*, 2007, 8:7-10
2. Huo Zhiguo, Li Shikui, Wang Suyan, et al. Study on the risk evaluation technologies of main agrometeorological disasters and their application, *Journal of Natural Resources*, 18(6) 2003 692-702
霍治国, 李世奎, 王素艳等. 主要农业气象灾害风险评估技术及其应用研究[J]. *自然资源学报*, 2003, 18(6): 692-702
3. Li Yunhui, He Yimei, Yang Zisheng. Analysis on reduced grain yield from agricultural natural disaster in Jinsha river basin of Yunnan province. *Journal of Mountain Science*. 20(Sup.) 2002 43-48
李云辉, 贺一梅, 扬子生. 云南金沙江流域因灾减产粮食量分析[J]. *山地学报*. 2002.20 (增刊): 43-48
4. Zhang Xing, Zhang Chungui, Wu Juxin, et al. Risk assessment of yield losses from a gro-meteorological disasters in Fujian Province, *Journal of Natural Disasters*, 18(1) 2009 90-94
张星, 张春桂, 吴菊薪等. 福建农业气象灾害的产量灾损风险评估[J]. *自然灾害学报*, 2009, 18(1): 90-94
5. http://www.cma.gov.cn/qxxw/t20071115_220733.phtml
6. <http://www.tech-food.com/news/2012-3-14/n0732086.htm>
7. Zhao Junfang, Yan Xiaodong, Jia Gensuo. Simulating the responses of forest net primary productivity and carbon budget to climate change in northeast China. *ACTA Ecologica Sinica*, 28(1) 2008 92-102
赵俊芳, 延晓冬, 贾根锁. 东北森林净第一性生产力与碳收支对气候变化的响应[J]. *生态学报*, 2008, 28(1): 92-102
8. Chen Shupeng, Lu Xuejun, Zhou Chenghu. *Introduction to Geographical Information Systems*. Science Press, Beijing, 2009, 119
陈述彭, 鲁学军, 周成虎. *地理信息系统导论*[M]. 北京: 科学出版社, 2002: 119
9. Zhou Yao, Wang Jingai. A review on development of vulnerability curve of natural disaster. *Advances in Earth Science*, 27(4) 2012 435-442
周瑶, 王静爱. 自然灾害脆弱性曲线研究进展[J]. *地球科学进展*, 2012, 27(4): 435-442
10. Wang Lihong, Yang Ruihua, Tian Zhihong, et al. Maize GRP rate of premium deciding by nonparametric kernel density: A case study on Anguo city, Hebei province. *Journal of China Agricultural University*, 12(1) 2007 90-94
王丽红, 杨华, 田志宏, 等. 非参数核密度法厘定玉米区域产量保险费率研究—以河北安国市为例[J]. *中国农业大学学报*, 2007, 12(1): 90-94
11. Guo Yingchun, Yan Yiling, Wang Wei, et al. The methods of agricultural natural risk evaluation and regional insurance premium calculation. *Quarterly Journal of Applied Meteorology*. 5 (1998) 232-237
郭迎春, 闫宜玲, 王卫, 等. 农业自然风险评估及区域农业保险费率的确定方法[J]. *应用气象学报*, 1998(5):232-237
12. Barry K G, Alan P K. Nonparametric estimation of crop yield distributions: implications for rating group-risk crop insurance contracts. *Amer J Agr Econ*, 80 (1998) 139-153
13. Alan P K, Barry K G. Nonparametric estimation of crop insurance rates revisited. *Amer J Agr Econ*, 83 (2000) 463-478