[1]匡昭敏,朱伟军,黄永璘,等.广西喀斯特干旱农业区干旱遥感监测模型研究[J].自然灾害学报,2009,01:112-117.

KUANG Zhao-min,ZHU Wei-jun,HUANG Yong-lin,et al.Research on remote sensing drought monitoring model for Guangxi karst arid agricultural area[J].,2009,01:112-117.

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广西喀斯特干旱农业区干旱遥感监测模型研究(PDF)

《自然灾害学报》[ISSN:/CN:23-1324/X] 期数: 2009年01期 页码: 112-117 栏目: 出版日期: 1900-01-01

Title: Research on remote sensing drought monitoring model for Guangxi karst arid agricultural area

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关键词: 干旱; 遥感监测; 喀斯特; 广西

Keywords: drought; remote sensing monitoring; karst; Guangxi

分类号: TP79;P426

DOI: -

文献标识码: -

摘要: 广西中部喀斯特平原区是广西重要的粮食生产基地,但旱灾已成为该地区经济发展的障碍.利用EOS/MODIS数据,采用植被状态指数(I_{VC})和温度条件指数(I_{TC}),构建了干旱指数I_D的遥感监测模型,统计分析了I_D与农业受旱率的相关系数,从而确定了模型中各参数的权重系数.将该模型应用于2005年秋旱监测,经与旱情实况及前人研究成果进行对比分析,验证了干旱指数I_D的有效性.通过对I_D随I_{TC}和I_{VC}变化的敏感性评价,结果表明,I_{TC}和I_{VC}都能反映旱情变化,但I_{TC}反映旱情的敏感性高于I_{VC},以I_{TC}和I_{VC}为因子构建的干旱遥感监测模型适用于广西中部喀斯特干旱农业区的旱情遥感监测.

Abstract: The karst plain area in middle Guangxi is an important grain production base,but drought has become serious impediment to regional development.Land surface temperature dataset and NDVI dataset derived from EOS/MODIS were used to calculate vegetation condition index and temperature condition index,and a dryness index I_D was constructed.The weight of each parameter was determined by analyzing the correlative coefficients between dryness index I_D and agriculture drought percentage,Using the I_D,the spatiotemporal distribution of autumn drought in middle Guangxi karst plain area in 2005 was

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studied.spatiotemporal pattern of I_D was compared with the real drought condition data from the observatories around Guangxi.Then,the sensitivity of I_D to temperature condition index and vegetation condition index was evaluated.The results show that the change of dryness are more sensitive to temperature condition index than to vegetation condition index,and dryness indexes I_D based on temperature condition index and vegetation condition index are reasonable for the middle Gugnxi karst plain area.

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备注/Memo: 收稿日期:2007-03-28;改回日期:2007-07-10。
基金项目:广西气象局重点科研项目(2004-233-2)
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更新日期/Last Update: 1900-01-01