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浙江省永嘉县滑坡灾害风险预警研究(PDF)

Title: Early warning of landslide risk in Yongjia County, Zhejiang Province

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关键词: 滑坡; 信息-物元模型; 灾害易发性; 风险预测

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摘要: 永嘉县地处浙江省东南沿海,是该省突发性地质灾害预警预报系统研究及应用示范项目的四个示范县之一.首先对影响永嘉县滑坡灾害发育的主要因素进行了评价分析,提出了基于降雨的时空耦合滑坡灾害风险性预警预报研究的基本思路.基于MAPGIS二次开发系统,选取5个因素14种状态作为预测变量,运用信息-物元模型进行了滑坡灾害易发性空间预测.基于有效降雨量模型建立了区域滑坡灾害的宏观危险性预警预报模型.根据浙江省气象台提供的降雨实时信息,进行了基于降雨的台风期滑坡灾害危险性预警.同时基于人口密度和房屋建筑易损性指数对人口易损性和房屋建筑易损性以乡镇为单元进行了评价,与滑坡灾害危险性预警相结合进行了云娜台风期间永嘉县滑坡灾害风险预警预报,并以8个灾害点的实际分布情况验证了预警结果的准确性.将传统的滑坡灾害危险性预警延伸到滑坡灾害风险预警预报,为政府部门防灾减灾提供了重要依据,使防灾减灾工作的针对性大大增强.

Abstract: Yongjia County is located in southeast littoral of Zhejiang Province.It is one of the four demonstrative areas in the Project, which name is "Warning System and Application Demonstration for Paroxysmal Ggeological Hazarrd in Zhejiang Province, China".At first, the main factors to affect landslide location were evaluated.The flow chart of areal landslide risk space-time prediction based on real-time rain fall was put forward.In the MAPGIS-based warning system, information-matter element Model wss adopted to landslide susceptibility assessment.Five representative factors were selected as the evaluating parameters.And the areal rainfall threshold model was built up with combination of effective rainfall model.At same tmie, the population vulnerability and

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construction vulnerability of each village was evaluated based on population intensity and construction vu lnerability index.With combination of landslide susceptibility assessment and real-tmie rainfall, the landslide risk prediction was realized during "Yunna" typhoon in August 2004.The veracity of the prediction result was proved by the real distribution of the eight landslide points.This research extends the trad itional landslide prediction to landslide risk prediction, which provides the government important basis for hazard relief to increase the efficiency.

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