[1]聂娟,范一大,邓磊,等.山洪灾害雷达遥感灾情评估技术研究与应用[J].自然灾害学报,2010,03:105-110.

NIE Juan,FAN Yi-da,DENG Lei,et al.Research and application of torrential flood loss assessment based on radar remote sensing technology[J].,2010,03:105-110.

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山洪灾害雷达遥感灾情评估技术研究与应用

《自然灾害学报》[ISSN:/CN:23-1324/X] 期数: 2010年03期 页码: 105-110 栏目: 出版日期: 2010-03-01

Title: Research and application of torrential flood loss assessment based on radar remote sensing technology

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关键词: 雷达遥感; 洪涝; 山洪; 泥石流; 灾害信息提取; 灾情评估

Keywords: radar remote sensing; flood and waterlogging; torrential flood; debris flow; disaster information extraction; disaster assessment

分类号: P642.23;TP79

DOI: -

文献标识码: -

摘要: 雷达遥感的全天时、全天候和高分辨率等特点为洪涝(山洪)、泥石流等自然灾害的灾情评估提供了可能。但目前遥感洪涝监测和评估多局限在洪水影响区域的提取上,较少开展灾后耕地、居民地损失的评估。在前人研究的基础上,探讨了一种基于雷达后向散射成像原理提取受灾耕地(主要是绝收耕地)和倒损房屋区域的方法,继而实现了灾害信息的准确提取和农作物受灾、因房屋倒损而受灾人口的评估。经与GPS地面调查数据验证,表明该方法简单、可行,具有一定准确性,能用于福建等山区山洪、泥石流等灾害的灾后评估,为政府灾情评估、灾后恢复重建工作提供辅助决策支持。

Abstract: Due to all-whether,all-day and high spatial resolutions of SAR,It is possible to assess disaster,such as flood(flash flood) and debris flow by SAR.However,current methods for monitoring and assessing flood using RS mostly focused on extracting the area affected by

flood from images,not on assessing the loss of farm-land and resident land posterior to disaster.This article presents one method to extract the affected farm lands(totally lost) and destroyed houses areas from SAR images based on the backscattering coefficient of SAR Imaging,so as to extract accurate information and assess crop loss and affected human suffered from destroyed houses.Verified with GPS ground investigation data,it is proved that this measure is simple,practical and accurate and can be used in assessing mountain flash flood and debris flow posterior to disaster in Fujian Province.As a result,it can provide the decision-making for governments in disaster assessment and post disaster rehabilitation and reconstruction.

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