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广州市洪水灾害危险性评价初步研究(PDF)

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Title: Primary study on risk evaluation of flood disater in Guangzhou City

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摘要: 广州是中国洪灾危险性最高的城市之一.灾害发生频率高,影响范围广,损失巨大.利用GIS技术,首先对洪灾危险性的5个主要影响因子——洪灾频次、地形、河网、降水量以及暴雨日数进行了分析和数字化,得到了各因子对洪水灾害影响程度的栅格图层;其次,对这些图层进行了空间叠加,运用AHP决策分析模型,结合计算出的各因子权重值,得到了广州市洪水灾害危险性评价图.结果显示:这5个影响因素相互叠加与制约,尤以年暴雨日数、洪灾频次和地形对洪灾危险性的贡献较大.广州市洪灾危险度呈现出南部高、北部低,东西高、中央低的空间格局.

Abstract: Guangzhou is one of the highest risk cities of flood disaster.The huge loss had been made by the high frequency and wide scope influence of the disaster.With the development of the economy and society,the loss will increase,and more areas will be influenced once the flood disaster occurs.In this paper,the function on space analysis and overlap of ARC/INFO GIS platform was used.Firstly,through analysis and digitization,five raster coverages were made for the following factors that composed flood risk:frequency of floods happening in history,topography,river net,precipitation,and the number of annual rainstorm days.Secondly,a map of assessment for flood risk in Guangzhou City is made by overlaping these raster coverages of the five factors,composing AHP decision analysis model,and combining the calculated weight of each factor.The result shows that,the influences of the five factors splice and restrict each other,especially the number of annual rainstorm days,the frequency of floods happening in history and the topography give more contribution to the risk of flood disaster in Guangzhou City.The south of Guangzhou City is high-risk area and

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the north of Guangzhou City is low-risk area;the east and the west of Guangzhou City are high-risk areas and the centre of Guangzhou City is low-risk area.The dominant factors witch lead to this pattern is the differences in elevation and differences of distribution of rivers.

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