

## 属性层次模型在乡级基本农田保护区布局优化中的应用

### Attribute hierarchical model and its application to the optimal allocation of prime farmland protection areas at local level

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英文关键词: optimal allocation; attribute hierarchical model; zero-one integer programming; prime farmland protection area

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中文摘要:

基本农田保护区布局优化包括耕地综合质量排序和耕地入选两个决策过程。该文根据这两个决策过程的特点, 相应建立了基于属性测度的属性层次排序模型和0-1整数规划入选模型。在此基础上, 以MAPGIS为二次开发平台, 编制了基本农田保护区布局优化决策系统。并利用该模型和系统对山西省太原市万柏林区东社乡的基本农田保护区布局优化进行了实证。结果表明, 该模型有效地解决了乡级基本农田保护区布局优化的决策问题, 同时也为区域土地利用优化提供了一种新方法。

英文摘要:

Optimal allocation for prime farmland protection area is a decision-making process. Ranking cultivated land synthetically and selecting cultivated land into prime farmland protection area are the two logical correlated parts of the process. Based on the characteristics of the two processes, this paper presents an attribute hierarchical ranking model what based on attribute measure and a zero-one integer programming selecting model. And a decision-making system of optimal allocation for prime farmland protection area was integrated by applying the second-developed technology of MAPGIS. The system was demonstrated in Dongshe Country, Wanbolin District, Taiyuan City. The results showed that the decision-making models can solve the decision-making problem of optimal allocation for prime farmland protection area at local level effectively, and the research also provides a new method for the optimal allocation of territorial land use.

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