

论文

基于组合权重的煤层气有利区块模糊优选

罗金辉, 杨永国, 秦勇, 徐伟伟

中国矿业大学 资源与地球科学学院, 江苏 徐州 221116

摘要:

为优先对黔西-滇东煤层气聚气区内有利含气区块进行开发, 以6个代表性煤层气区块为研究对象, 选取储层因素、资源因素和开发因素3方面9项指标构成评价矩阵, 运用灰关联分析和层次分析法建立组合权重向量, 通过多层次多目标模糊优选模型对研究区进行优选排序, 并通过专题地图反映优选结果。结果表明, 最优目标区块是织纳煤田, 较优目标区是盘县、老厂、六枝和水城矿区, 恩洪矿区则为一般目标区。

关键词: 组合权重; 煤层气; 有利区块; 模糊优选; 黔西-滇东

Fuzzy optimization for CBM favorable targets based on combined weights

Abstract:

To optimizing coalbed methane(CBM) favorable targets in western Guizhou Province and eastern Yunnan Province, six typical areas were focused on to estimate which should be explored preferentially. Firstly, nine parameters in three categories, e.g. the coal reservoir, the resource conditions and the exploitation infrastructures were concentrated to form an evaluation matrix. Subsequently, the matrix was weighted by a vector that combined the grey correlation analysis and the analytic hierarchy process(AHP) and was calculated in a fuzzy multi-objective and multi-level optimization model. Finally, the results of the calculation were drawn on a thematic map. It indicate that the optimal target is the Zhina Coalmine, and the Panxian Coalmine is suboptimal as well as the Laochang, Liuzhi and Shuicheng Coalmines. By contrast, the Enhong Coalmine is unfavorable.

Keywords: combined weights; CBM; favorable targets; fuzzy optimization; western Guizhou and eastern Yunnan

收稿日期 2011-10-28 修回日期 2012-01-11 网络版发布日期 2012-02-21

DOI:

基金项目:

国家自然科学基金资助项目(40972207, 40730422); 国家科技重大专项资助项目(2011ZX05034-005)

通讯作者: 罗金辉

作者简介: 罗金辉(1983—), 男, 陕西安康人, 博士研究生

作者Email: luojh0520@cumt.edu.cn

参考文献:

本刊中的类似文章

扩展功能

本文信息

- ▶ Supporting info
- ▶ PDF(1236KB)
- ▶ [HTML全文]
- ▶ 参考文献PDF
- ▶ 参考文献

服务与反馈

- ▶ 把本文推荐给朋友
- ▶ 加入我的书架
- ▶ 加入引用管理器
- ▶ 引用本文
- ▶ Email Alert
- ▶ 文章反馈
- ▶ 浏览反馈信息

本文关键词相关文章

- ▶ 组合权重; 煤层气; 有利区块; 模糊优选; 黔西-滇东

本文作者相关文章

- ▶ 罗金辉
- ▶ 杨永国
- ▶ 秦勇
- ▶ 徐伟伟

PubMed

- ▶ Article by Luo,J.H
- ▶ Article by Yang,Y.G
- ▶ Article by Qin,y
- ▶ Article by Xu,W.W