

## 天津滨海新区软土工程地质分区多级模糊综合评判模型

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MULTILEVEL FUZZY SYNTHETIC EVALUATION MODEL FOR SOFT SOIL ENGINEERING GEOLOGICAL ZONING  
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- 摘要
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摘要 选择软土的成因类型、工程性质、空间分布及场地工程环境4个二级评价影响因素和相对应的16个一级单因素评价指标,采用模糊数学的方法,建立了天津滨海新区软土工程地质分区多级模糊综合评判模型。利用该模型对一般道路、货场、单层厂房等轻型建筑地基作用的浅部层进行分区,结果表明该区软土工程场地条件由西向东逐渐变差,特别是吹填场地为该区最不利的工程场地。

关键词: 多级模糊综合评判 吹填场地 海积软土

Abstract: This paper chooses the genetic type, engineering properties, space distribution, and engineering site environment of soft soil as the second level evaluation factors and their corresponding 16 individual factors as the first level evaluation factors. It then uses the method of fuzzy mathematics to build a multilevel fuzzy synthetic evaluation model especially applicable to the engineering geology of the soft soil in Tianjin Binhai New Area. This model is used to zone the shallow layer affected by light building foundations of ordinary road, yard, and single storey workshop. The results show that the soft soil engineering conditions gradually become poorer from west to east. Particularly the blast-fill site is the most unfavorable engineering site in the area.

Key words: Multilevel fuzzy synthetic evaluation Blast-fill site Marine soft soil

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[1] 王福, 宋美钰, 田立柱, 等. 影响天津滨海新区建设的地质环境[J]. 海洋地质动态, 2008, 24 (6): 9~14.

Wang Fu, Song Meiyu, Tian Lizhu, et al. The influence of geological environment for construction in Tianjin Binhai new area. Marine Geol Letters, 2008, 24 (6): 9~14.

[2] 吕远强, 林杜军, 罗伟强. 基于人工神经网络的区域地质灾害危险性预测评价[J]. 中国地质灾害与防治学报, 2007, 18 (1): 95~99. 

Lü Yuanqiang, Lin Dujun, Luo Weiqiang. Study on artificial Nn method for forecast and risk assessment of regional geologic hazards. The Chinese Journal of Geological Hazard and Control, 2007, 18 (1): 95~99.

[3] J C Davis, C J Chung, C O Gregory. Two models for evaluating landslide hazards[J]. Computers & Geosciences, 2006, 32 (8): 1120~1127



[4] H Marcel, C Ramon, A Joan. Detailed debris flow hazard assessment in Andorra: A multidisciplinary approach[J]. Geomorphology, 2006, 78

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## 作者相关文章

~4): 359~372. 

- [5] L J Li, L T Shen. An improved multilevel fuzzy comprehensive evaluation algorithm for security performance[J]. The Journal of China Universities of Posts and Telecommunications, 2006, 13 (4): 48~53. 
- [6] O E Guleda, I Demir, H Halil. Assessment of urban air quality in Istanbul using fuzzy synthetic evaluation[J]. Atmospheric Environment, 2004, 38 (23): 3809~3815. 
- [7] 杨和雄. 模糊数学和它的应用[M]. 天津: 天津科学技术出版社, 1993, 147~174.
- [8] Yang Hexiong. Fuzzy Mathematics and Its Application. Tianjin: Tianjin Sciences & Technology Press, 1993, 147~174.
- [9] Zhang Yue, Zou Shouping, Su Fen. Utilization of Fuzzy Mathematics Method. Beijing: Coal Industry Press, 1992, 146~212.
- [10] 陈守煜. 系统模糊决策理论与应用[M]. 大连: 大连理工大学出版社, 1994, 1~98.
- [11] Chen Shouyu. Theory and Application of System Fuzzy Decision-Making. Dalian: Dalian University of Technology Press, 1994, 1~98.
- [12] 闫满存, 李华梅, 王光谦. 广东沿海陆地地质环境质量定量评价研究[J]. 工程地质学报, 2000, 8 (4): 416~425. 浏览  
Yan Mancun, Li Huamei, Wang Guangqian. Quantitative assessment of geological-environmental quality of the land along Guangdong coast. Journal of Engineering Geology, 2000, 8 (4): 416~425. 浏览
- [13] 王思敬, 李国和. 金沙江流域区域地壳稳定性分区与定量评价[J]. 工程地质学报, 1998, 6 (4): 189~300.  
Wang Sijing, Li Guohe. Quantitative assessment and zonation of regional crust stability in the Jinshajiang basin. Journal of Engineering Geology, 1998, 6 (4): 189~300.
- [14] 郝洪强, 刘志刚. 模糊数学综合评判法在区域地质环境质量评价中的应用[J]. 水文地质工程地质, 1995, 22 (6): 44~55.   
Hao Hongqiang, Liu Zhigang. Application of the fuzzy mathematics comprehensive judgment to assessment of the regional geological environmental quality. Hydrogeology and Engineering Geology, 1995, 22 (6): 44~55.
- [1] 王宝勋 李夕兵 杜东菊 杨爱武. 应用碱性水泥外加剂固化天津海积软土的试验研究[J]. 工程地质学报, 2009, 17(3): 426-433.
- [2] 雷华阳, 肖树芳. 天津软土的次固结变形特性研究[J]. 工程地质学报, 2002, 10(4): 385-389.