


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基于延拓盲数的湖库水体富营养化评价模型 

Eutrophication evaluation model for lake and reservoir based on extended-blind number

关键词: [延拓盲数](#) [可信度](#) [富营养化](#) [综合营养状态指数](#) [巢湖](#)

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摘要: 基于湖库水环境系统随机性、模糊性、灰性、未确知性等多种不确定性共存或交叉存在的特点,将延拓盲数引入水体富营养化评价,通过与综合营养状态指数方法的综合集成,构建了湖库水体富营养化评价延拓盲数模型和等级识别模式,并将其应用于巢湖塘西河河口水体富营养化评价.结果表明:塘西河河口水体处于重富营养化状态,可信度超过0.86(即86%),且在模糊截集水平 $\alpha=0.8$ 情形下,综合营养状态指数期望值达79.34,属于重富营养等级.实例研究证明了新构建模型对于不确定性条件下湖库水体富营养化评价的适用性和有效性.

Abstract: Based on the concomitancy or cross characteristics of multiple uncertainties such as randomness, fuzziness, grey and uncertainty in lake and reservoir water environment system, an extended-blind number method was applied for lake eutrophication assessment. Evaluation and identification models for nutrition state were proposed by integrating extended-blind number theory with comprehensive nutrition state index method, and were applied to the eutrophication evaluation for estuary of Tangxihe River in Lake Chaohu. Results showed that the water in the estuarine of Tangxihe River was in the state of serious eutrophication, with the credibility degree higher than 0.86 (i.e. 86%). Under the fuzzy α -cut set level of 0.8, the expected value of comprehensive nutrition state index was estimated as 79.34, suggesting a level of serious eutrophication. This case study proved that the newly established extended-blind number model coupled with comprehensive nutrition state index method showed higher practicability and effectiveness for eutrophication evaluation of lake and reservoir with significant uncertainties.

Key words: [extended-blind number](#) [credibility degree](#) [eutrophication](#) [index of comprehensive nutrition](#) [Lake Chaohu](#)

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