农业工程

基于改进BP网络模型的水质预测模型的研究

邱靖[1],杨毅[2],张亚静[1],叶轩[1]

1.云南农业大学工程技术学院，云南　昆明　650201；
2.云南农业大学基础与信息工程学院，云南　昆明　650201

摘要　　运用人工神经网络理论和方法,建立了基于三层BP网络的预测模型,并对BP算法进行了改进。并就长江流域丰水期全流域的水质情况进行模拟比较,确定了该模型的隐含节点数以及实用范围,并能较精确地预测今后5年的发展趋势,且预测结果客观。证明了该预测模型具有较强泛化能力,是一种行之有效的预测非线性类问题的模型。
关键词　　人工神经网络　改进BP算法　预测模型　水质
分类号　TP 183

Study of Forecasting Model on Water Quality Based on Improved BP Model

QIU Jing[1],YANG Yi[2],ZHANG Yan-jing[1], YE Xuan[1]

1.Faculty of Engineering and Technology, Y A U,Kunming 650201,China;
2.Faculty of Foundation and Information Engineering, Y A U,Kunming 650201,China

Abstract
 This paper makes use of ANN theory and its method and built up the estimate model of the BP network and also makes some improvements to the BP algorithm. It passed the water quality of Yangtze valley to carry on imitating and comparing. It made sure the number of implicit layer and the practical scope. This model can predict developed trend in five years and its result is reasonable and objective and also proved that it have strong generalization ability. It is a very valid model of estimating nonlinear problem.

Key words　ANN　improved BP algorithm　forecasting model　water quality

DOI:

通讯作者　邱靖