

混合類神經與遺傳演算法於水庫優養最佳控制之研究

梁惠儀, 陳莉, 陳大元, 何智超

土木與工程資訊學系

工學院

lichen@chu.edu.tw

摘要

Recently, eutrophication has been a serious problem results in pollution of reservoirs' quality. A lot of factors including the size, depth and shape of a reservoir as well as the intensity of sun light, could affect nutrients concentration in reservoirs. Many studies have been devoted to how to control lake nutrient concentration to avoid eutrophication. However, most of these studies were based on linear and stable methods, such as usual soil lose equation or AGNPS modle, to estimate non-point source pollution or point source pollution. In this study, we attempt to use artificial neural network (ANN) to construct water quality forecast models. This model combines different factors to predict dynamic nutrient concentration. Owing to the factors maybe exist non-linear relationships; we hybridize ANN with genetic algorithms (GAs) to discuss the feasibility of controlling phosphorus loads into the reservoir.

關鍵字：Eutrophication, Artificial Neural Network, Genetic Algorithms.