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**The evaluation of algal dynamics in the lower Nakdong River using combination of multivariate statistics and artificial neural networks.**

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The changes of algal biomass in the lower Nakdong River was modelled by means of a recurrent artificial neural network (RANN), and the characteristics of dynamics were evaluated using multivariate statistics and RANN. 5 years limnological dataset (1994-1998) were used to develop RANN model as well as multivariate analysis. Factor Analysis (FA) firstly extracted important factors from dataset, and neural network model was trained with same database. On the sensitivity analysis, input variables of RANN model were grouped according to FA results. Two types of sensitivity analysis (Sensitivity on Wide-ranged Disturbance, SWD; Sensitivity on Time-Series, STS) showed that the timing and importance of meteorological, hydrological, physico-chemical and biological parameters to chlorophyll a concentration differed according to seasons, and their degree of impact were various. From this study, it is possible to consider a feasible extraction method for complicated ecological dataset. Furthermore, the performance of non-linear model can be encouraged with relevant statistical analysis.

Key words : Algal dynamics, multivariate statistics, artificial neural network, non-linear modelling.