



“Gheorghe Asachi” Technical University of Iasi, Romania



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## POLLUTION LOAD AND ECOLOGICAL REPLENISHMENT PLAN OF LIJIANG RIVER, CHINA

Ronghui Li<sup>1,2</sup>, Zhiqiang Wu<sup>1</sup>, Lin Li<sup>2</sup>, Desuo Cai<sup>1</sup>, Fuqiang Wang<sup>3</sup>, Lie Huang<sup>4\*</sup>

<sup>1</sup>College of Life science and Technology, Guangxi University, Nanning, 530003, China

<sup>2</sup>Guangxi Institute of Water Resources Research, Nanning, 530023, China

<sup>3</sup>North China University of Water Resources and Electric Power, School of Water Conservancy, Zhengzhou 450011, China

<sup>4</sup>College of Hydrology and Water Resources, Hohai University, Nanjing, 210098, China

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### Abstract

Lijiang River is the link of Guilin landscape and the golden waterway of Guilin tourism. With the development of social economy, the pollution problem of Lijiang River in recent decades has become more and more serious, which has aroused widespread concern and attention. However, the study on the reduction of river pollution load is seldom found reported until now. In this paper, the pollutant load of Lijiang River is estimated by equal standard pollution load method and the water pollution model is used to simulate the reduction of river pollution load under different ecological water supply of upstream reservoir. The calculation results showed that the livestock and poultry breeding and rural life are the main sources of pollution, and the main pollutants are TN and TP, the pollution load ratio data of which is 30.30% and 29.39% respectively. The simulation results indicated that three kinds of upstream reservoir replenishment plans have obvious effect on the reduction in pollution load of Lijiang water. After being replenished by upstream reservoir, the concentration of water in downstream of the replenishment point decrease rapidly, the higher the water intensity is, the faster the concentration will decrease. Compared with the target year (S2), the 30m<sup>3</sup>/s water replenishment plan from the upstream reservoir can reduce about 20% of the annual average maximum concentration of COD<sub>Mn</sub> and NH<sub>4</sub>-N in the river, and 60m<sup>3</sup>/s water replenishment can reduce about 40% in same rate. At the same time, by the comparison of annual average data and dry season average date simulation, we found that the constant replenishment in dry season improve water quality obviously.

**Keywords:** ecological replenishment, Lijiang River system, plan analysis, pollution load

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\* Author to whom all correspondence should be addressed: e-mail: LieH1993@163.com