

On evaluating water quality in the intake from the Wangyu River

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Abstract The assessment of the fate and transport of pollutants is important for ensuring the water quality in the upper and lower reaches of the Wangyu River inlet on the Yangtze River in the cities of Zhangjiangang and Changshu. A two-dimensional, coupled flow and transport model is used in this study for the hydrological simulation of flow and pollutant transport and diffusion. The finite volume method and Osher-type approximate Riemann solver are used in the model for discretizing equations and obtaining solutions. Based on the design conditions, the pollutant mixing zones are modelled while the relationship between the mixing zones and the amount of pollutant discharge is evaluated. The results provide a better understanding of the water quality in the Wangyu River intake and provide a scientific basis for the water diversion project.

Key words Wangyu River inlet; finite volume method; Riemann solver; pollutant mixing zone; reachability of water quality
