

Simulation and control of ammonia nitrogen loss from farmland around Taihu Lake

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Abstract A model is developed to simulate ammonia nitrogen loss with drainage runoff from farmland. Sediment discharge in surface runoff is estimated based on exponential equations and Freundlich isotherm equations are used to describe the relations between ammonium absorbed and dissolved in soil in the model. Ammonia nitrogen loss processes from the farmland around Taihu Lake in three typical years are simulated based on the investigation of soil characteristics and the hydrology of the Taihu Lake basin. The results show the harmful effects of ammonia nitrogen loss from the farmland on the water quality of Taihu Lake. Several measures are suggested to reduce ammonia nitrogen loss from the farmland in the basin.

Keywords ammonia nitrogen loss; farmland; Freundlich isotherm; model; Taihu Lake; water quality
