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Interactive comment on “Model based on dimensional analysis for prediction of nitrogen and phosphorus concentration in the River Laborec” by M. Zeleňáková et al.

M. Zeleňáková et al.

martina.zelenakova@tuke.sk

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Thank you very much for your comment on the paper. We consider your opinion on the issue with the highest respect. Let us restate the purpose and the scope of the paper, please. The manuscript presents an original and instructive approach to the prediction of pollutant concentration in a river using dimensional analysis. Modelling pollutant occurrence in a stream is a very difficult and complex problem. This issue is influenced by a lot of natural as well as artificial phenomena, particularly human activities in the catchment. To consider all the variables influencing this process is practically impossi-

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ble. We chose the main ones to present the possibility of using dimensional analysis as a tool for description of a phenomenon as complex as pollutant occurrence in a stream. The aim of the paper was not only scientifically but also practically to use the results of research in water management practice. We intend to broaden our research and consider other equally important variables, e.g. rainfall or nutrient applicability in the catchment, but this will be the task of our future research. In this paper we would like to point out the broad applicability of this model. It could be used in any catchment and for any pollutant. The important point is to calculate new regression coefficients A and B for each catchment or each pollutant. So this manuscript has general significance, not only for the field of water quality modelling. Its importance is for water management in general, to predict the pollutant concentration in a stream and to save a lot of expensive monitoring equipment and its maintenance as well as laboratory work. Prediction of pollutant concentration will be able to achieve good water status according to the Water Framework Directive. We appreciate the reviewer's comments, and will surely consider them in our next comparative studies. We feel the negative comment will make us understand other points of view and to accelerate our professional research and our further studies.

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