Hydrology and Earth System Sciences Discussions

Interactive comment on "Uncertainty in computations of the spread of warm water in a river – lessons from Environmental Impact Assessment" *by* M. B. Kalinowska and P. M. Rowiński

Anonymous Referee #2

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This is excellent paper discussing some of the pragmatic issues relating to pollutant transport modeling in rivers. The authors give a good description of the mixing models available and outline the confusion regarding choices of lateral and longitudinal diffusion/dispersion models.

Some practical calculations illustrate their main point.

With regard to the other reviewer's concern I think I understand where he/she is coming

from however I slightly disagree with the final point.

The author's have chosen to analyze a low flow case as the critical condition. This makes complete sense as this is the condition with minimum dilution of the pollutant discharge and hence the largest concentrations.

The other reviewer's valid point (I think) is that the critical condition would be one of *zero* dispersion/diffusion. While this is true it is a condition that does not occur in practice and so for any practical calculation we should use a best choice of the physical parameters with full disclosure of the uncertainty in that choice.

The other reviewer's minor corrections should be noted and changed. I would recommend a proof reading by a native English speaker.

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 9, 5871, 2012.