

Interactive comment on “Application of optical tomography in the study of discolouration in drinking water distribution systems” by P. van Thienen et al.

Anonymous Referee #2

Received and published: 3 November 2011

Comments on paper: “Application of optimal tomography in the study of discolouration in drinking water distribution systems” by van Thienen et al.

The authors report on the development of an optical tomography technique to study particle deposition processes in drinking water mains. They describe the setup of the measuring device, they present the mathematical model used for the interpretation of the light intensity signals obtained from the measurement device and provide the results of dry laboratory tests.

The application of tomography in the field of drinking water research is new and the application presented here is interesting. This will help to better understand the mech-

C37

anisms governing particle deposition in water mains through laboratory experiments. My understanding is that the authors are presenting a methodology that is still under development (considering the possible improvements listed at the end of the paper), but I believe it would still be valuable to publish the information available to date.

Specific comments: - P42, line 22-26: For fig 2b-e, it is mentioned that most light reaching the sensors follows the most direct route through the pipe and then four mechanisms are listed. Does the most direct route include these four mechanisms or only one of these? Please clarify. - P48, line 25: the authors briefly discuss wet tests performed with the tomography device. However, these results are not very detailed. The authors should either remove this paragraph or present these results in a more detailed way. In fact, the latter would strengthen the manuscript. - P49, line 20: At the beginning of section 4.2, it is mentioned that several practical issues were come across and resolved during the test phase. The authors then mention that optical properties of particles are important. . . (line 20-23). However, it is not clear from the actual text how this issue was resolved. Or is this only an observation? - P52, line 1: I would like the authors to discuss more about the impact of not considering light scattering and reflection by particles in the current model - Section 5 Conclusions: This section needs to be expanded to actually reflect the conclusions of the paper.

Interactive comment on Drink. Water Eng. Sci. Discuss., 4, 39, 2011.

C38