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Drinking Water Engineering and Science Discussions

Interactive comment on "Experimental and numerical effects of flow hydraulics and pipe geometry on leakage behavior of laboratory water network distribution systems" *by* Tamer Nabil et al.

Anonymous Referee #2

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The authors performed an experimental and numerical investigation on leakage behaviour, influenced by pipe geometry and hydraulics. Rewording would be to improve the quality of the paper and make it easier to read. For instance, the Introduction section is difficult to follow/read. It should be re-written to be less general and to provide more specific information directly linked to the objectives of the paper. Sections 2 (theoretical background), 3 (experimental work), 4 (numerical simulations), 5 (experimental error and uncertainty analysis) and one part of the section 7 (Matlab simulation of solenoid valve) should be combined into one section (Materials and methods). This

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Discussion paper

section should be written so that the reader has a better understanding of how the research was performed. The number of Figures and Tables should be reduced both in Materials and methods and Results sections. When the results are presented, less general comments should be made and specific comparisons with the literature should be made. Overall: The idea of the paper is interesting, but the authors should consider re-writing it to meet the standards of DWES Journal.

Specific comments are given below:

Line 12 How is leakage behaviour considered life-threatening?

Line 15: Spelling errors: consideretion and geametry. There are other typos further in the text. Therefore, general spelling and grammar check is also essential.

Line 24 - 25 The sentence is not clear, please rephrase. What do you mean by ancient?

Line 31- 33 The sentence is not clear, please rephrase.

Line 38 – 118 – As given in general comments, the Introduction section should be re-written in order to be less general and to provide more specific information directly linked to the objectives of the paper.

Line 136: The Figure belongs to Experimental work.

Section 6, first paragraph (there are no text lines that I could refer to): This is summary of your methodology, not results.

Line 145: Combine Fig 2, 3, 4 into one Figure.

Line 150: Table 1 is better suited for Supplementary information.

Line 165: Use a capital letter for the sub-section title.

Line 228: Combine Figure 1 and Figure 7 into one.

Line 236 – 256: This is too detailed, please put it into Supplementary information.

Line 257: You have introduced Experimental error and uncertainty analysis. However, the uncertainty was not discussed in the paper; and you only briefly discussed the experimental error. Please provide more info regarding this.

Line 268: Table 3 is better suited for Supplementary information, but the error should be discussed in the paper.

Line 270 – 384: As given in general comments, the number of Figures and Tables should be reduced. When the results are presented, less general comments should be made and specific comparisons with the literature should be made.

Line 271: What do you mean by validation in Figure caption? It looks more like a comparison. Also, combine Figure 10 and Figure 11 into one.

Line 272: It is evident from the Figure 11, that experimental and numerical results for the point 12 are considerably different. However, this was not explained in the text. Please include an explanation here.

Line 287: combine Figure 12 and Figure 13 into one (also further in the paper do the same).

Line 385 – 410 – These lines belong to the Material and method section.

Line 421: What do you mean by small?

Line 422 - 423: Have you calculated “leakage amount of water”? If yes, please specify.

Line 426 – 448 – This is more summary and observations, rather than conclusions. Please specify what you can conclude from your observations (results).

Line 442 – 444 –First you include/discuss this in the discussion part, and only then you can put it into conclusions.

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