Interactive comment on "Numerical and experimental investigation of leaks in viscoelastic pressurized pipes" *by* S. Meniconi et al.

Anonymous Referee #3

Received and published: 10 December 2012

This paper presents an interesting study on pressure transients in viscoelastic pipes with leaks.

As a major comment I appreciate if the authors could cite the paper published by Soares et al. (2011), in which a complex experimental setup made of PVC pipes has been studied considering leaks (damaged pipes as presented in this paper). It was noted that the viscoelastic effect is more important than that one from unsteady friction in PVC pipes (but not quantitatively as in Duan et al., 2010). The same conclusion for HDPE pipes is presented in this paper, but considering a reservoir-pipe-valve (RPV) system.

I have some minor comments, just to improve the quality of the paper.

1) The authors can trace the wave speed in the experimental setup with leaks by means of the inspecting of time spent between the pressure transducers (points U, D, M), and compare it with the wave speed variation used in the simulations.

2) The authors possibly used the Kelvin-Voigt model to calculate the viscoelastic term. In this way, the authors should present the parameters of the Kelvin-Voigt model (number of KV elements, creep function etc.). The same requesting is applied to UF model (decay coefficient used).

Soares, A.K., Covas, D.I.C, Reis, L.F.R. (2011). Leak detection by inverse transient analysis in an experimental PVC pipe system, Journal of Hydroinformatics, 13(2), 153-166.

Interactive comment on Drink. Water Eng. Sci. Discuss., 5, 473, 2012.