

***Interactive comment on “A decision tree model to estimate the value of information provided by a groundwater quality monitoring network” by A. Khader et al.***

**Anonymous Referee #2**

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I must say I really enjoyed reading this paper. It is well written and structured. It presents the problem in a clear way and the proposed methods are easy to follow. Although it does not go deep into the technicalities of the Value Of Information (VOI) as other papers do, the concept is used in a very original and appropriate way. The following comments aim to improve even more this interesting manuscript:

1. The estimation of the probabilities presented in Section 3.2 is based on the relative frequency of a number of scenarios coming from prior Monte Carlo simulations and RVM model results. How many MC and RVM runs were actually made in order to es-

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timate these probabilities? This is important since the use of frequency approaches to estimate probabilities require a large sample size, ideally approaching infinity. Unfortunately, these details are not available because the cited paper containing such information is currently under review. I would recommend to enrich the section with a brief description of the MC and RVM results.

2. There are two recent and relevant papers that could complement the literature review. First, in the discussion in page 13809, paragraph 15, the work by Bouma et al. (2009), with respect to interviewing decision makers to get their "willingness to pay" for water quality monitoring using remote sensing. Second, in page 13808, paragraph 10, the work by Alfonso and Price (2012), with respect to the use of models to estimate the probabilities required the VOI estimation to design monitoring networks.

3. The novelty of the paper, the use of the VOI in a decision-tree approach, should be explicitly stated. A sentence in the introduction will suffice.

References Alfonso, L., Price, R. (2012) Coupling hydrodynamic models and value of information for designing stage monitoring networks, *Water Resources Research* 48 (8), W08530 Bouma, J. A., H. J. van der Woerd, and O. J. Kuik (2009), Assessing the value of information for water quality management in the North Sea, *Journal of Environmental Management*, 90(2), 1280-1288.

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