

## ***Interactive comment on “Shallow water table effects on water, sediment and pesticide transport in vegetative filter strips: Part B. model coupling, application, factor importance and uncertainty” by Claire Lauvernet and Rafael Muñoz-Carpena***

**M Vanclooster (Referee)**

marnik.vanclooster@uclouvain.be

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This paper is a second paper following the companion paper submitted in HESS 405. In this paper, the authors link the integral form infiltration model developed in HESS 405 with VFSSMOD, a model designed for simulating flow, sediment and pollutant transport in Vegetative Filter Strip (VFS) systems. Subsequently, they test the modelling performance of the model using data collected from two monitored VFS in France. They finally address the sensitivity of the parameters of the integrated model using two approaches (Morris sensitivity analysis and eFast analysis), and evaluate the uncer-

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tainty on simulated functional properties (retention of water, sediments and pesticides) of VFS systems.

As stated in the review of HESS 405, the update of VFSSMOD is relevant for evaluating the functioning and potential of VFS systems, which are considered as effective management systems to reduce the impact of agricultural practices on runoff, sediment load and surface water contamination. Little is known on the impact of shallow water tables on VFS functioning. The updated VFSSMOD clearly demonstrates the strong impact of shallow water on VFS functioning. The model has therefore a strong potential to improve designing VFS systems in agricultural ecosystem.

The paper enters in the scope of HESS, is well written and it follows a logical approach. It is therefore a significant contribution to hydrological science.

Yet, the added value of 2 sensitivity analysis approaches is not clear. Authors implement the Morris and eFast approaches that clearly are consistent and coherent. There seems to be little added value of implementing 2 sensitivity analysis approaches. The paper therefore loose some focus by complicating this analysis. It could be suggested to eliminate the Morris analysis which does not add new information as compared to the eFast analysis.

Further, the manuscript suffers from some editorials that should be considered in a minor revision of the manuscript before it can be accepted for publication.

Please also note the supplement to this comment:

<https://www.hydrol-earth-syst-sci-discuss.net/hess-2017-406/hess-2017-406-RC1-supplement.pdf>

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