

Interactive comment on “Uncertainty analysis of floodplain friction in hydrodynamic models” by Guilherme Dalledonne et al.

Anonymous Referee #2

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Overview This study describes an interesting analysis on the estimation of uncertainty of hydrodynamic models on floodplains. Specifically, the variability of the velocity predictions of a 2-D hydrodynamic model related to the uncertainty of vegetated floodplain friction parameterization is investigated. Four traditional floodplain resistance formulae are considered using three different uncertainty analysis (UA) methods: i.e. First Order Second Moment, Monte Carlo sampling and metamodeling. The analysis carried on a case study selected along the Rhine River, show that the three UA methods compared gave similar results which means that First-Order Second-Moment is the less expensive one.

Comments The topic of the work is of interest for the scientific community and consistent with the aim of the journal. English is sound and the manuscript is well written. I

C1

was able to follow the analysis carried out by the authors even if I suggest some necessary modifications. One limit concerns the confusion on the used symbols: some of them are not clearly defined, both in the text and in the tables captions (e.g. H, D, t, x, y, ...), and some other are used to indicate more than one quantity (e.g., d). Moreover, the authors use acronyms before they are defined. I was wondering about the meaning of the term ‘prediction interval’ and if it is considered as an ‘uncertainty band’. The comment of the previous reviewer and the reply of the authors shed light on this issue. I must say that, from my point of view, the term ‘sensitivity analysis’ would be more appropriate in this case. Minor comments: - explain what ‘with a probability of occurrence larger than HQ5’ means. - use always the past tense or the present tense throughout the manuscript.

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C2