

***Interactive comment on* “Controls of fluorescent tracer retention by soils and sediments” by Marcus Bork et al.**

Marcus Bork et al.

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We thank the reviewer for spending his time to review our manuscript. We appreciate his suggestions that definitely helped us to improve our manuscript. Below, we described point by point how we addressed the comments (in italics) in the revised paper. In blue you will find the positions of the corresponding changes in the revised manuscript:

Comment 1: *Abstract too detailed. Requirements of the journal specify the abstract to include a brief introduction of the topic, the summary recapitulates the key points of the article and mentions possible directions for prospective research. I suggest the authors to revise the abstract and insert less details on the experiments set up.*

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Response 1: We thank the referee for this important comment. We revised the abstract, which is more tense now.

Revision in the marked manuscript: p.1/p.2, l.2-27/l.1-6 (Abstract)

Comment 2: *Pg 2- Line 12- This "multi-tracer approach") - please edit with "multi-tracer approach".*

Response 2: Thank you for this remark. The typing error was corrected.

Revision in the marked manuscript: p.2, l.18 (Introduction)

Comment 3: *Pg 3 line 13-19. Please correct your English.*

Response 3: Thank you for this comment. An experienced colleague who is a native speaker checked this paragraph once again.

Revision in the marked manuscript: p.3, l.18-24 (Introduction)

Comment 4: *Introduction: From line 20 to 33, there are details related to the methods used which should be moved to the related section.*

Response 4: We thank the referee for this important suggestion. We shortened the respective paragraph and removed unnecessary details.

Revision in the marked manuscript: p.2, l.26-32 (Introduction)

Comment 5: *Materials and methods- should include a section describing the case study and all characteristics on the soil and sediments analysed.*

Response 5: We thank the referee for encouraging us to support our materials and methods section. The characterization and analysis of soil and sediment samples is described in section 2.1 ("The substrates"). Here we describe the sample preparation (p.4, l.11-12), the determination of the residual gravimetric water content (p.4, l.12-15), the texture (p.4, l.15-16), the pH (p.4, l.16-17), the DOC concentration (p.4, l.18-20). Furthermore we described the measurement of OM (p.4, l.22-26), the specific surface

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area (p.5, l.27-29), the metal oxide contents (p.4, l.30-33/p.5, l.1) and the measurement of all element concentrations by ICP-OES (p.5, l.1-2).

Comment 6: *References to the figures and tables are vague.*

Response 6: We thank the referee for this comment. We have added additional references to figures and tables to the text, which are now better integrated into the text.

Revision in the marked manuscript: p.3, l.7 (Tab.1); p.6, l.3 (Fig.1); p.8, l.1 (Tab.2)

Comment 7: *The method used in not very well explained. The different sub-paragraphs should be better addressed and introduced.*

Response 7: We thank the referee for this suggestion. We have introduced and better addressed the subsections of the methods section in the revised manuscript.

Revision in the marked manuscript: p.4, l.7-8 (The substrates); p.5, l.18-19 (2.3.1 Substrate treatments); p.6, l.6 (3.2.2 Sorption isotherms)

Comment 8: *Figures captions are too long. Figure 2-6. The description of the figures should be added to the text rather than having long figure titles.*

Response 8: We thank the referee for this important suggestion. We distinctly shortened the figure titles and added the removed information to the material and methods section where it was still missing.

Revision in the manuscript: Fig.2 -> some text to p.6, l.20-22; Fig.3 -> removed information, already written in M&M: p.7, l.4; Fig.4 -> removed information, already written in M&M: p.5, l.20-21; Fig.5 -> removed information, already written in M&M: p.7, l.4; Fig.6 -> removed information, already written in R&D: p.11, l.3 and l.17

Comment 9: *Page 4 line 9. Tab S1- Not clear this reference as there is a Table 1.*

Response 9: Thanks for this remark. "Tab. S1" refers to Table S1 that can be found

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in the supplement to the manuscript.

Please also note the supplement to this comment:

<https://www.hydrol-earth-syst-sci-discuss.net/hess-2019-229/hess-2019-229-AC2-supplement.pdf>

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., <https://doi.org/10.5194/hess-2019-229>, 2019.

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