

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

### **Anonymous Referee #1**

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Comment to the paper: “Controls of fluorescent tracer retention by soils and sediments” by Marcus Bork et al.

General comment: The manuscript deals with batch investigations on uranine and sulforhodamine B adsorption in soils and to quantify their impact and possible interactions. In particular, the effects of several parameters, such as soil composition (clay and organic matter) and pH have been investigated. The manuscript is suitable to be published in this journal; however, some points should be addressed before publication. Some minor language mistakes are present that should anyway be corrected.

Specific comments: 2.1 The substrates If you want to investigate the adsorption of uranine and sulforhodamine B by soil, you should consider the soil as an adsorptive material, consequently the soil should be characterized as an adsorptive material.

Please, include into the characterization several fundamental parameters such as pore size, BET surface area, density, average diameter, porosity. Please, include water-content (you described how it was measured but I cannot find measurement results). 2.3.2 Sorption isotherms of the tracers Please, specify the temperature investigated, because this parameter is fundamental for the adsorption processes. It is not clear the reason because you investigated the adsorption of tracers by batch tests and not by using column tests, considering the variation of humidity along the column. Please, support your approach. Please, check variation range of concentration of compounds in solution because the ranges specified seem to be different with respect the ones in Figures 2 and 4. 3. Results and discussion Please, improve comparison between experimental findings and literature data. 3.1 Physico-chemical properties of substrates and treatments Table 2: It seems that the higher the clay content the higher the lower the specific surface area. I was expected a different trend. 3.4.1 Sorption of UR To be honest, I cannot see the linearity of the increase of the adsorption of UR with clay content in the investigated range (0-10 %).

Please also note the supplement to this comment:

<https://www.hydrol-earth-syst-sci-discuss.net/hess-2018-549/hess-2018-549-RC1-supplement.pdf>

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Discussion paper

