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Interactive comment on "Experimental study on retardation of a heavy NAPL vapor in partially saturated porous media" *by* Simon M. Kleinknecht et al.

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We would like to thank you for this thorough and descriptive review. We agree that parts of the manuscript lack clarity and need to be revised to make the objective and results of our work better accessible and coherent.

We concur that the main weak point of our manuscript is the simplifying assumption that only dissolution is responsible for the retention of CS2 while we neglected adsorption at the air-water interface and at the solid phase. Our intention for a revised manuscript is to address this issue and consult recent publications (as indicated) regarding these processes as well as look into the feasibility to conduct own batch experiments under saturated conditions to determine the missing sorption coefficient KD. This appears

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to us as the key issue to provide a revised manuscript with improved and more well-grounded conclusions on transport and retardation of CS2.

Moreover, we plan to look more carefully into the process and timescales of biodegradation, though to our knowledge only few publications are available. Unfortunately, experiments to quantify biodegradation lie beyond the scope of this manuscript.

Other issues raised in the review will be addressed by providing a better motivation and elaborating the reasoning more precisely. Your comments in this review will greatly help us to do so.

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