

Interactive comment on “Repercussions of differential settling on sediment assemblages and multi-proxy palaeo-reconstructions” by A. G. M. Caromel et al.

Anonymous Referee #1

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This paper reports the result of calculation of travel distance of small particles produced in the water column. I think this paper provides basic information for conducting paleoceanographic investigations by analyzing the proxies in the sediment. Lateral transport of particles in the water column has often been overlooked by paleoceanographers. However, I think this manuscript seems still in immature phase as described below. Therefore, at this stage I cannot critically evaluate this manuscript, and thus cannot recommend it to publish in Biogeosciences at this stage.

First of all, the authors should describe the methodology (especially for detailed processes estimating the numbers shown in Table 1) in this paper rather than reporting it in a different paper currently in prep. Otherwise, this paper cannot be critically eval-

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uated by the reviewing process. I strongly recommend that the authors should combine the informations to make a single paper.

Transfer function of plankton shells was constructed by comparing assemblages between sediment and surface water. Therefore, the transfer function itself includes the information of transport of shells in the water column. What the authors discuss in the discussion section may be true, but they did not estimate how the transport process quantitatively affects the paleo-record estimated through transfer functions that already include travel process in the water column. The authors should carefully discuss this point.

In addition to the surface current, the bottom current also transports the fine particles as well. Especially in some areas in the ocean, it has been known that strong bottom current resuspends and transports the sedimentary particles. Can't this process be assessed in the authors' method?

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