

Interactive comment on “The marine sedimentary nitrogen isotope record” by J. E. Tesdal et al.

Anonymous Referee #1

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This manuscript reports the data base of d15N values for bulk sedimentary (seafloor + subsurface) nitrogen from all over the world ocean that the authors recently collected from world-wide scientists and literatures. This is an interesting trial and should have important implications for paleoceanographers and biogeochemists concerning marine nitrogen cycle. Particularly, such a compilation allows empirical evaluation of the usefulness of the bulk sedimentary d15N proxy. It seems to me that there are still contrasting views for d15N of bulk sedimentary nitrogen as a paleoceanographic proxy; one group believes diagenetic alteration of the d15N value is not large enough, and the sedimentary d15N is quite useful for reconstructing the nitrogen cycle in the ocean. However, the other group of people thinks that the diagenesis significantly alters the d15N record and its alteration is not straightforward, and thus careful interpretation of the sedimentary d15N record is required. The data set presented in this manuscript may partially resolve above optimistic and pessimistic views, and potentially reconcile

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these views. But I feel this manuscript missed it, simply because the authors do not discuss the data (especially for seafloor data) but describe only the “results”. Instead, they refer Galbraith et al. (in prep.) as a full discussion of the data. I think Galbraith et al. (in prep.) should be combined in this manuscript to expand this to a single full paper with more discussion of the data. Because of this, unfortunately, at this stage, I do not recommend to publish this manuscript in Biogeosciences.

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