Earth Syst. Sci. Data Discuss., referee comment RC2
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Comment on essd-2022-161

Anonymous Referee #2

Referee comment on "MOdern River archivEs of Particulate Organic Carbon: MOREPOC" by Yutian Ke et al., Earth Syst. Sci. Data Discuss.,
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Ke and colleagues provide a large (~ 4x the size of previously compiled sets) compilation of published data on riverine particulate organic carbon (POC, incl. isotopic composition and related N content), suspended particulate matter concentrations (SPM),and Al/Si weight ratios of the corresponding sediment. This comprehensible dataset is f good quality and accompanied by a wealth of metadata, such as geographical or methodological information, improving its interpretability and usability of the database. However, uncertainties are commonly reported alongside carbon isotopic values and could be integrated into the database. Clarity and variable naming could also be improved. Otherwise, I have only a few minor comments regarding the database (see PDF).

The descriptive article adequately summarizes database content, structure and patterns within the data. It gives most background information necessary to understand relevance, quality and acquisition of the data. At times the article is written too much in a POC-expert language and misses a few explanations necessary to fully understand the data. More specific comments are attached.

This publication seems timely, relevant and useful to the Earth science community and, generally, researchers interested in riverine and coastal organic matter processes and carbon cycling. The size and high spatial coverage of the set provide a proper statistical basis and will certainly help improving our understanding of terrestrial and marine carbon cycling. Detailed comments on data and article can be found in the attached PDF. After these issues have been addressed, I strongly support publication in Earth System Science Data.

Please also note the supplement to this comment:
https://essd.copernicus.org/preprints/essd-2022-161/essd-2022-161-RC2-supplement.pdf