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Interactive comment on "Past and present of sediment and carbon biogeochemical cycling models" *by* F. T. Mackenzie et al.

Anonymous Referee #2

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This is an excellent review that focusses on a overly neglected part of the carbon cycle, the coastal oceans. I especially like the alternative method for calculating the average thickness of the zone of anthropogenic CO_2 uptake by the oceans and the statement that much global CO_2 degassing may be from deep sedimentary basins and not from subduction zones. Suggestions for minor correction are: 1. Page 9 The average age of subducting oceanic crust and sediments is not 150 Ma but younger. 150 Ma is the age of the oldest c rust being subducted 2. page 13. Some mention of increased burial of organic matter on land in coal basins during the late Paleozoic should be mentioned 3. page 21. Additional references for rates of anthropogeniuc CO_2 production and rates of uptake by CO_2 sinks should be given 4. Somewhere a statement should be made that in the pre-industrial world release of CO_2 from the oceans to the atmosphere, due to $CaCO_3$ deposition, is necessary to balance that CO_2 consumed by the weathering of carbonates.



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