

Interactive comment on “The nature of organic carbon in density-fractionated sediments in the Sacramento-San Joaquin River Delta (California)” by S. G. Wakeham and E. A. Canuel

Anonymous Referee #1

Received and published: 5 November 2015

This paper details the bulk carbon properties of density-fractionated sediments in rivers that carry sediment from a watershed to the ocean. It contains a great, unique, dataset of fundamental measurements on the density-fractionated sediments’ organic carbon content, C:N ratios, and stable and radio- carbon measurements, as well as results from short- and long- chain fatty acids. The authors place their dataset in the context of other work on marine sediments and terrestrial soils. There are interesting differences and similarities observed amongst the density fractions at the different sites. One surprising difference is that observed between the radiocarbon content of the short- and long- chain fatty acids at two of the sites. Without radiocarbon measurements, this difference would not be apparent. The paper is well-written, well-documented and con-

C7392

tains clear, relevant figures.

Technical Comments:

p. 16162, line 10 The word “been” should only appear once.

p. 16163, line 25 “Jan” should be “San”

Section 2.5 should be titled “Carbon isotope analysis”

p. 16165, line 15 Suggest the following wording “Stable and radio- carbon isotope analysis ($\delta^{13}\text{C}$, $\delta^{14}\text{C}$ respectively). . .

p. 16167, line 7 first instance of “increased” should be “decreased”

p. 16168 lines 12-17 The definition of $\delta^{14}\text{C}$ and fraction modern are not clearly presented.

p. 16168 line 20 The statement in parentheses is confusing.

p. 16174 lines 14-16 Replace “most positive” and “most negative” with appropriate term

Interactive comment on Biogeosciences Discuss., 12, 16159, 2015.

C7393