

Interactive comment on “A two-dimensional model of the passive coastal margin deep sedimentary carbon and methane cycles” by D. E. Archer et al.

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This figure almost emphasizes the exact points I have been trying to make for awhile.

The figure now includes alkalinity (\sim DIC) for a site (??) on Blake Ridge for the upper 70 m. It shows DIC rising to about 28 mM at 70 mbsf. Okay.

What the figure inexplicably omits is that alkalinity (\sim DIC) continues to rise to 90-120 mM at 300 m at these sites on the Blake Ridge (the actual reference should be Paull et al., 1996, although this fact is crystal clear in the paper by Rodriguez et al., 2000).

This is the very problem in the model: it does not allow for DIC to increase above 28 mM because methane is not being generated at depth.

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I will try to discuss this in more detail with the authors off-line.

Hopefully, though, the problem is clear.

Interactive comment on Biogeosciences Discuss., 9, 2921, 2012.

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