



Interactive  
Comment

## ***Interactive comment on “A two-dimensional model of the methane cycle in a sedimentary accretionary wedge” by D. E. Archer and B. A. Buffett***

**Anonymous Referee #2**

Received and published: 8 May 2012

Archer and Buffett present a two-dimensional model of sediment column geophysics and geochemistry that is designed to simulated the carbon and methane cycling, as well as the potential methane hydrate inventory in an active margin sediments. The model is used to test the sensitivity of the hydrate inventory to a wide range of geo-physical and geochemical factors. The proposed model approach is novel and could potentially provide new insights into the coupled, margin-wide carbon cycling over geologically relevant timescales.

This manuscript is, in contrast to its companion manuscript, well phrased and, therefore, less confusing. However, again, the manuscript is not well structured and the authors need to provide a detailed and comprehensive model description. Such a de-

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper



scription is a prerequisite for a critical evaluation of the approach and the presented results. Therefore, the authors should consider providing a comprehensive description of SpongeBOB in form of a technical manuscript. A second manuscript could then summarise and compare the results of the sensitivity studies for active and passive margin sediments.

---

Interactive comment on Biogeosciences Discuss., 9, 2967, 2012.

**BGD**

9, C1074–C1075, 2012

---

Interactive  
Comment

[Full Screen / Esc](#)

[Printer-friendly Version](#)

[Interactive Discussion](#)

[Discussion Paper](#)

