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Interactive comment on “A model for the benthic-pelagic coupling of silica in estuarine ecosystems: sensitivity analysis and system scale simulation” by S. Arndt and P. Regnier

Anonymous Referee #1

Received and published: 3 April 2007

MS-NR: bgd-2007-0022

General comments: The paper is well written and appropriate for the journal. The subject of silica biogeochemistry in estuarine ecosystems is within the journals scope. The paper describes the status of previous modeling work and outlines the approach to combine a sensitivity study on reaction kinetics with an application to the river Scheldt. Furthermore, the paper presented a detailed quantification of silica cycling for the Scheldt. The amount of dissolved silica from the sediments has been compared to the riverine influx by modeling. The substantial conclusion is reached that the benthic contribution plays a minor role in the pelagic primary production dynamics.

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Specific comments: The title reflects the content of the paper and the abstract provide a complete summary. The language is fluent and the overall presentation is well structured including the references. Page 769, line 3ff: The measurements presented in Fig. 7 were not compared to simulation results and additionally discussed. The conclusion is "scarcity of field data" which follows in line 10ff. Is this the reason?

Technical corrections: Figures 2-5 and 8-9 are very small. At least, Fig. 5 should be enlarged.

Interactive comment on Biogeosciences Discuss., 4, 747, 2007.

BGD

4, S281–S282, 2007

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