2010 Ocean Sciences Meeting
Search Results

Cite abstracts as **Author(s) (2010), Title, *Eos Trans. AGU*, *91*(26), Ocean Sci. Meet. Suppl., Abstract xxxxx-xx**

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kroeger

HR: 0800h
AN: **IT51B-01**
TI: Carbon budget for the continental shelf of the Eastern United States
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AB: As a contribution to the Interim Synthesis of the North American Carbon Program, we have constructed a carbon budget for the continental shelf of the Eastern United States using available in situ observations, remote sensing, and numerical models. The motivation for this exercise is to determine those aspects of the carbon budget that are most uncertain and thus most in need of additional research. The main subregions of this shelf area are the Gulf of Maine, the Mid-Atlantic Bight, and the South Atlantic Bight. Estimates have been made for fluxes at the boundaries of the water column with the atmosphere, land, sediments, and the open ocean. The internal fluxes of primary

production, respiration, and net community production have also been considered. Carbon fluxes from land are known within a factor of two, but processing of carbon in estuaries and marsh systems is highly uncertain. The shelf region appears to be a sink of atmospheric carbon dioxide, but severe undersampling problems exist, particularly in the Gulf of Maine. Fluxes at the interfaces with the sediments and open ocean are very poorly constrained. Primary production is well characterized and likely dominates all other terms, except perhaps respiration, which is not well known. The limited studies available suggest that net community production in the mixed layer averages about 1/3 of primary production. Greatest research needs are to constrain cross-shelf fluxes, estuarine and marsh C processing, water column respiration, and shelf sediment fluxes (including groundwater).

DE: [0428] BIOGEOSCIENCES / Carbon cycling
DE: [4805] OCEANOGRAPHY: BIOLOGICAL AND CHEMICAL / Biogeochemical cycles, processes, and modeling
SC: Interdisciplinary (IT)
MN: 2010 Ocean Sciences Meeting

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