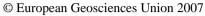
Geophysical Research Abstracts, Vol. 9, 03896, 2007

SRef-ID: 1607-7962/gra/EGU2007-A-03896





Biogeochemical response to a freshwater-induced weakening of the meridional overturning circulation

P. Parekh (1), F. Joos (1), S. Ritz (1), T. Stocker (1)

(1) Climate and Environmental Physics, Physics Institute, University of Bern, Bern, Switzerland, (parekh@climate.unibe.ch)

It has been postulated that a possible cause of millennial-scale, warming-cooling cycles of the last glacial period, such as the Younger Dryas, is changes in the thermohaline circulation triggered by the discharge of low density meltwater into the North Atlantic. Such a strong change in deepwater formation would also alter the distribution of biogeochemical tracers. Using the Bern3D coarse resolution ocean general circulation model, we investigate the biogeochemical response of PO₄, CO₂, O₂ and export production to changes in circulation due to an input of freshwater in the North Atlantic. We compare model results to Cd/Ca ratios from sediment cores.