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Title	Long-term response of oceanic carbon uptake to global warming via physical and biological pumps
Author(s)	Yamamoto, Akitomo; Abe-Ouchi, Ayako; Yamanaka, Yasuhiro
Citation	Biogeosciences, 15(13), 4163-4180 https://doi.org/10.5194/bg-15-4163-2018
Issue Date	2018-07-10
Doc URL	https://hdl.handle.net/2115/71486
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Type	journal article
File Information	bg-15-4163-2018-supplement.pdf





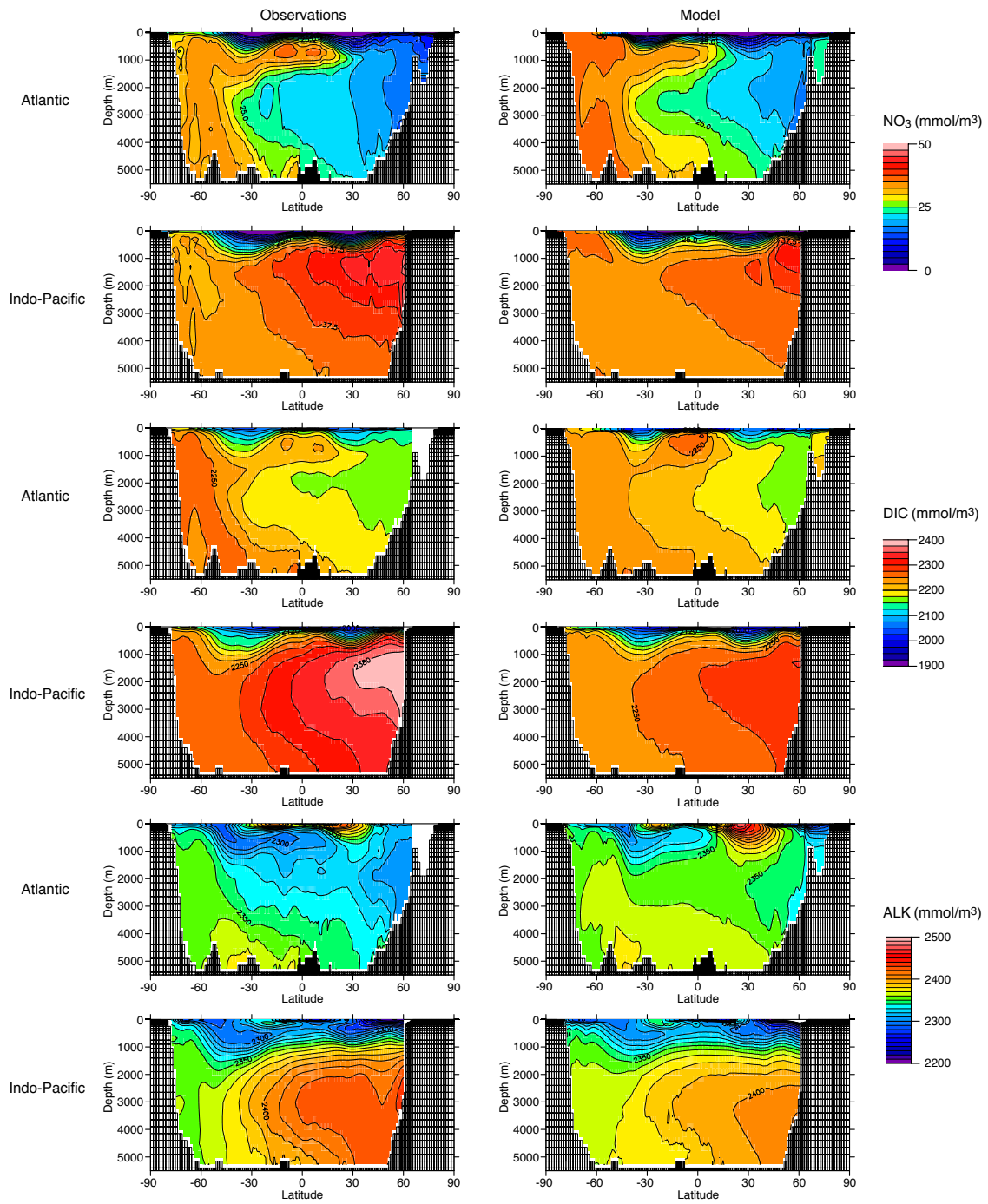
Supplement of

Long-term response of oceanic carbon uptake to global warming via physical and biological pumps

Akitomo Yamamoto et al.

Correspondence to: Akitomo Yamamoto (akitomo@jamstec.go.jp)

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2 **Figure S1.** Zonal distribution of nitrate (NO_3), dissolved inorganic carbon (DIC) and

3 alkalinity (ALK) for the Atlantic and Indo-Pacific Ocean in the observation (left) and

4 model (right).

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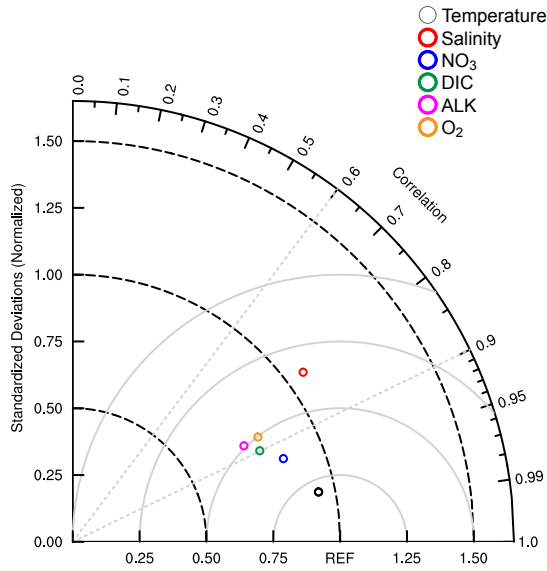


Figure S2. Physical and biogeochemical variables in the pre-industrial experiments are compared with observational datasets in a Taylor diagram (Taylor, 2001).

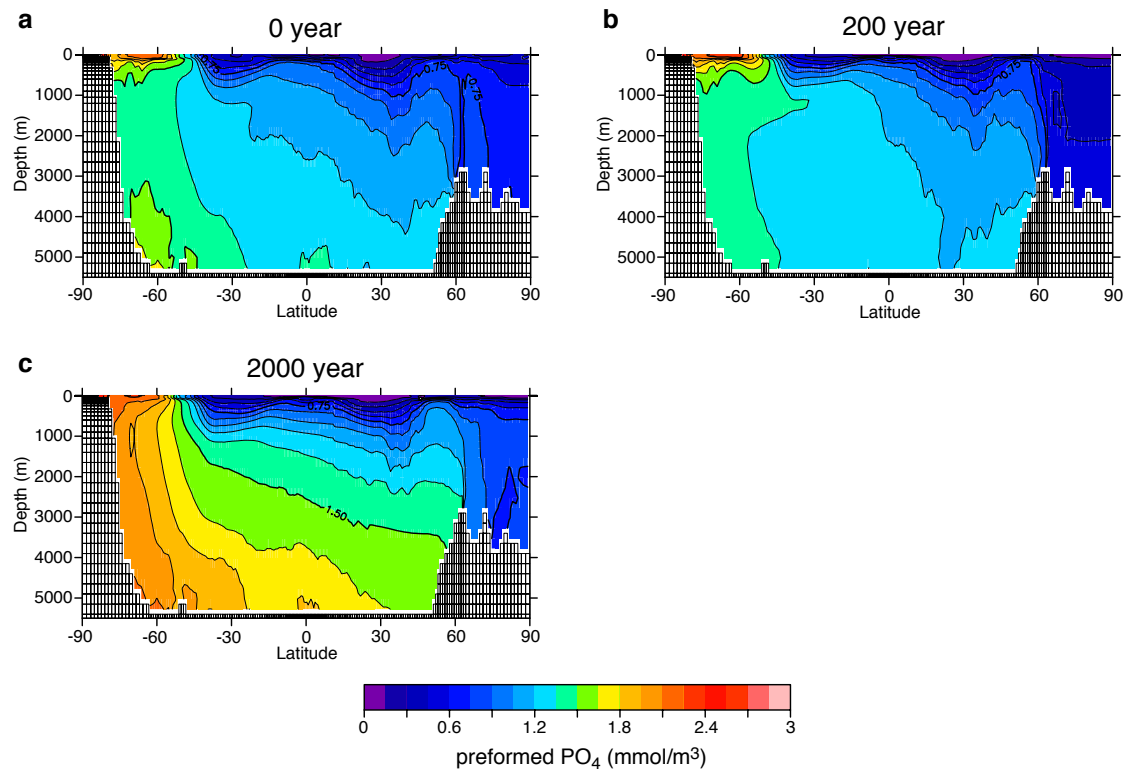
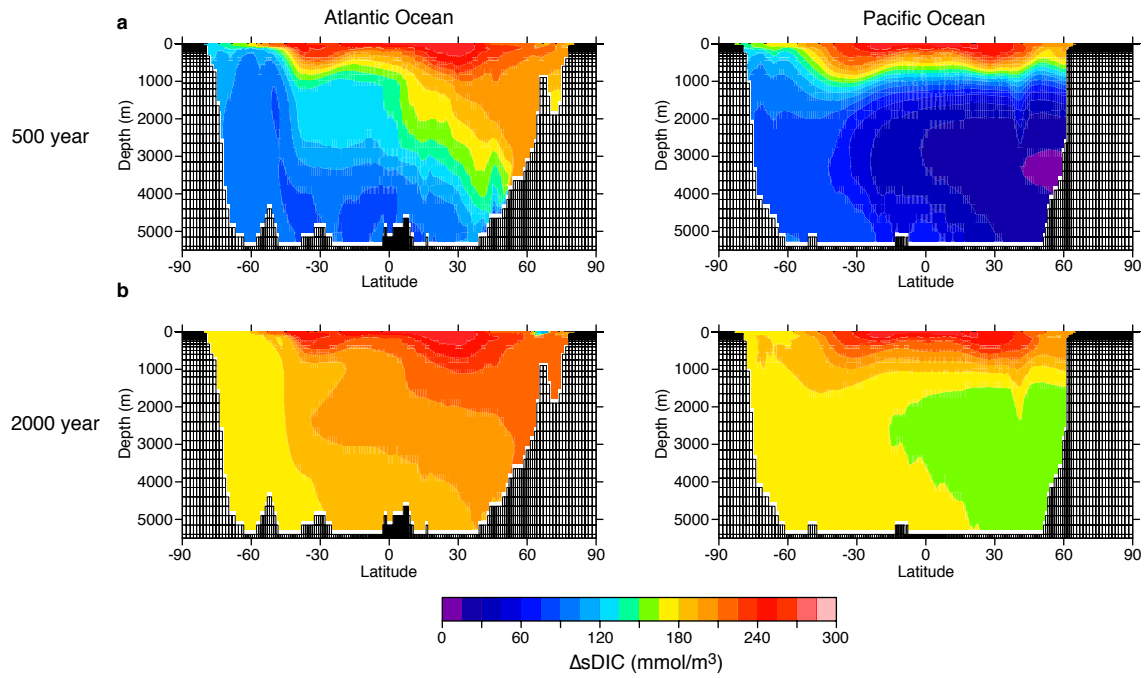


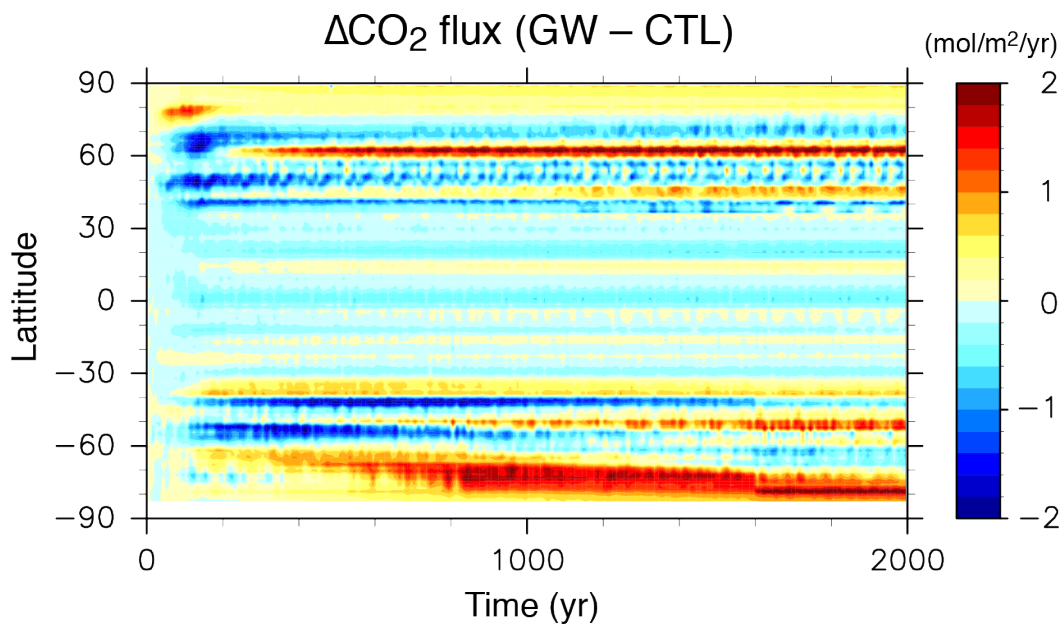
Figure S3. Zonal mean distribution of preformed PO₄ for (a) 0 years, (b) 200 years and (c) 2000 years in GW_bio.

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15 **Figure S4.** Zonal mean distribution of changes in the salinity-normalized DIC for (a)
 16 500 years and (b) 2000 years in the constant-climate run (CTL_{bio}). The left and right
 17 panels show the Atlantic and Indo-Pacific Oceans, respectively.



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19 **Figure S5.** Hovmöller diagram of the CO₂ uptake anomaly of GW_{bio} - CTL_{bio}.

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