

1 Supplemental material submitted for the paper

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4 **A model study of the seasonal and long term North Atlantic sur-**  
5 **face pCO<sub>2</sub> variability**

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7 J. F. Tjiputra, A. Olsen, K. Assmann, B. Pfeil, and C. Heinze

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10 **Introduction:**

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12 This supplemental material contains three figures.

13 Figure 1 shows time-series of sea surface temperature (SST) from both the  
14 model and observation over the 2002–2007 periods at the NASPG, NE-ATL,  
15 Caribbean, and BATS domains.

16 Figure 2 shows time-series of mixed layer depth (MLD) from the model, cli-  
17 matology estimates (de Boyer Montégut, 2004), and ocean reanalysis prod-  
18 uct (Ferry et al., 2010) over the 2002–2007 periods at the NASPG, NE-ATL,  
19 Caribbean, and BATS domains.

20 Figure 3 shows model simulated net primary production (NPP) for the four  
21 locations in the North Atlantic: sub polar (Nuka domain), sub tropical (North-  
22 east domain), the tropical (Caribbean domain), and BATS station. The model  
23 simulations are plotted together with the observational estimates based on the  
24 remote sensing model, VGPM (Behrenfeld et al., 1997).

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26 **References**

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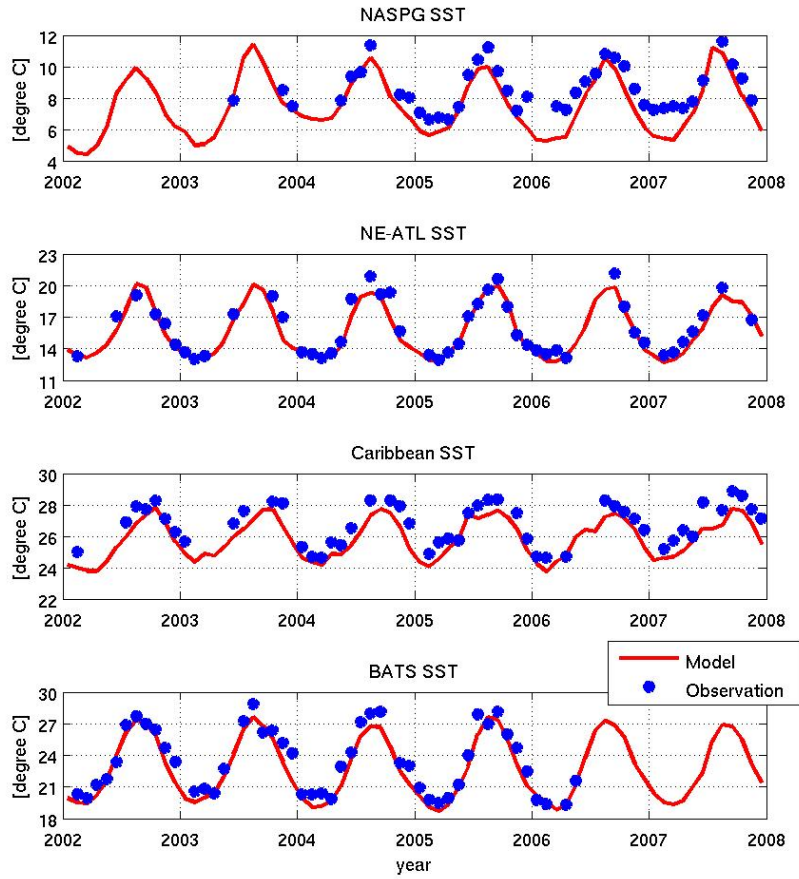


Figure 1: Time series of both observed and model simulated sea surface temperature (SST) for the four domains in the North Atlantic: North Atlantic subpolar gyre (NASPG), sub tropical (NE-ATL), Caribbean, and BATS over the 2002–2007 periods.

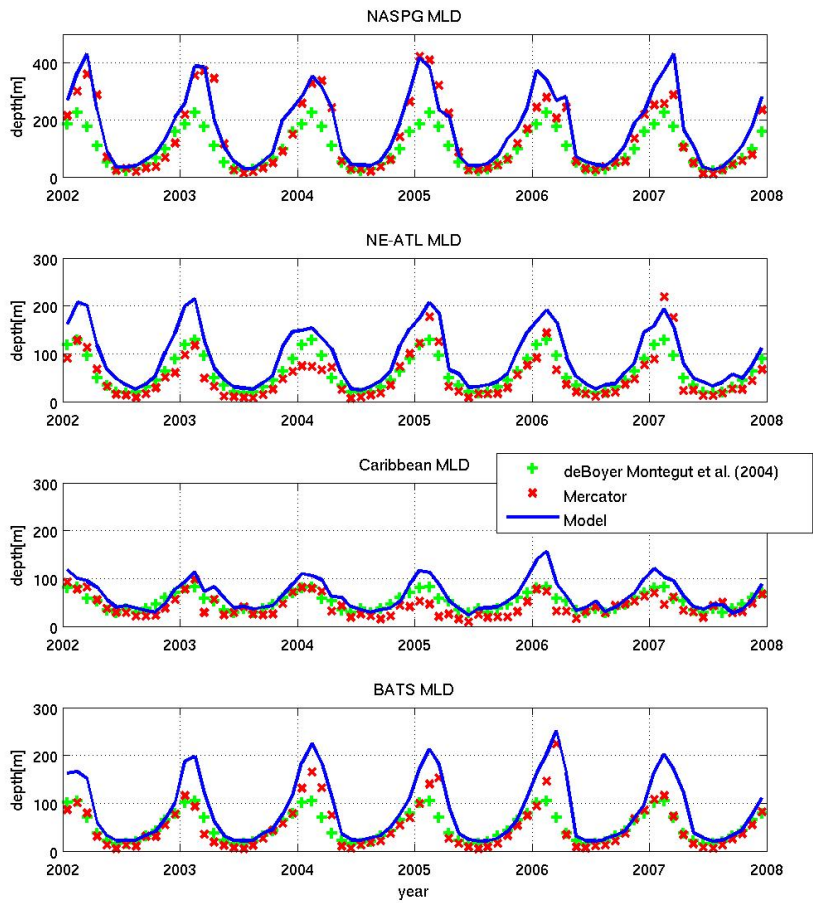


Figure 2: Time series of mixed layer depth (MLD) from the model output together with climatology estimates (de Boyer Montégut et al., 2004) and MERCATOR ocean reanalysis product (Ferry et al., 2010) for the four domains in the North Atlantic: North Atlantic subpolar gyre (NASPG), subtropical (NE-ATL), Caribbean, and BATS over the 2002–2007 periods.

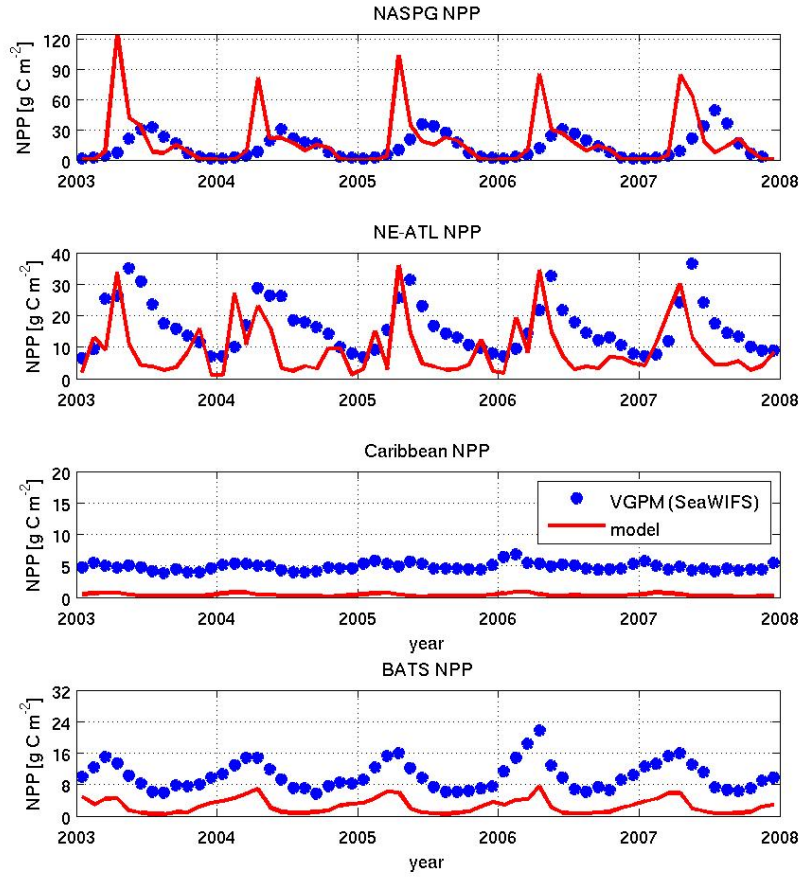


Figure 3: Time series of model simulated net primary production (NPP) for the three domains in the North Atlantic: sub polar (Nuka), sub tropical (NE-ATL), and tropical (Caribbean) regions over the 2003–2007 periods. The observational estimates from the SeaWiFS remote sensing data are also included.