

Reading List 3: Oceans and the Thermohaline Circulation

Washington & Parkinson, §3.8–3.9, §5.1–5.5

Oceans and Coupling

Bryan, K., 1963. A numerical investigation of a nonlinear model of a wind-driven ocean. *J. Atmos. Sci.*, **20**: 595–606.

*Collins, W. D., C. M. Bitz, M. L. Blackmon, G. B. Bonan, C. S. Bretherton, J. A. Carton, P. Chang, S. C. Doney, J. J. Hack, T. B. Henderson, J. T. Kiehl, W. G. Large, D. S. McKenna, B. D. Santer, & R. D. Smith, 2006. The Community Climate System Model Version 3 (CCSM3). *J. Climate*, **19**: 2122–2143. (Look over validation figures—a detailed read is not necessary.)

Danabasaglu, G., W. G. Large, J. J. Tribbia, P. R. Gent, B. P. Briegleb, & J. C. McWilliams, 2006. Diurnal coupling in the tropical oceans of CCSM3. *J. Climate*, **19**: 2347–2365.

*Holland, M. M., C. M. Bitz, E. C. Hunke, W. H. Lipscomb, & J. L. Schramm, 2006. Influence of the sea ice thickness distribution on polar climate in CCSM3. *J. Climate*, **19**: 2398–2414.

Jungclaus, J., N. Keenlyside, M. Botzet, H. Haak, J.-J. Luo, M. Latif, J. Marotzke, U. Mikolajewicz, & E. Roeckner, 2006. Ocean circulation and tropical variability in the coupled model ECHAM5/MPI-OM. *J. Climate*, **19**: 3952–3972.

Winton, M., 2003. On the climatic impact of ocean circulation. *J. Climate*, **16**: 2875–2889.

Short-Term Variability in the Deep Ocean

Broecker, W. S., & G. H. Denton, 1989. The role of ocean-atmosphere reorganizations in glacial cycles. *Geochimica et Cosmochimica Acta*, **53**: 2465–2501.

*Bryan, F. O., G. Danabasoglu, N. Nakashiki, Y. Yoshida, D.-H. Kim, J. Tsutsui, & S. C. Doney, 2006. Response of the North Atlantic thermohaline circulation and ventilation to increasing carbon dioxide in CCSM3. *J. Climate*, **19**: 2382–2397.

Delworth, T., S. Manabe, & R. J. Stouffer, 1993. Interdecadal variations of the thermohaline circulation in a coupled ocean-atmosphere model. *J. Climate*, **6**: 1993–2011.

Hu, A., G. A. Meehl, W. M. Washington, & A. Dai, 2004. Response of the Atlantic thermohaline circulation to increased atmospheric CO₂ in a coupled model. *J. Climate*, **17**: 4267–4279.

Stouffer, R. J., & S. Manabe, 2004. Multi-decadal thermohaline variability in an ocean-atmosphere general circulation model. *Climate Dynamics*, **22**: 759–773.

*(Indicates required reading.)