



## *Supplement of*

# **Climate change impacts on net primary production (NPP) and export production (EP) regulated by increasing stratification and phytoplankton community structure in the CMIP5 models**

**Weiwei Fu et al.**

*Correspondence to:* Weiwei Fu (weiweif@uci.edu)

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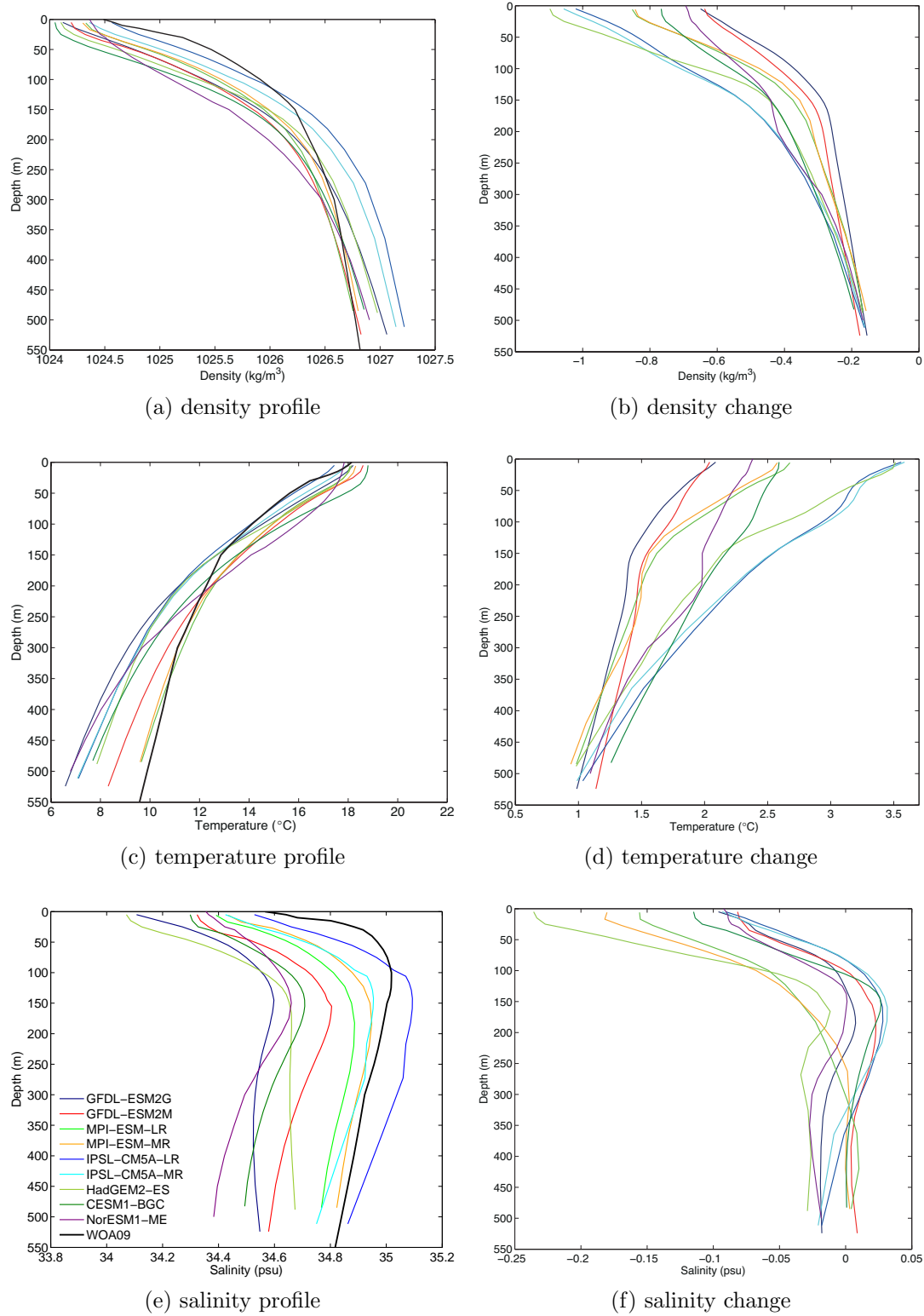


Figure S1. Mean vertical profiles are shown for density (a), temperature (c) and salinity (e) for the 1990s. Changes between the 2090s and 1990s are shown in (b), (d) and (f), for the same variables. Solid black line denotes WOA2009 data.

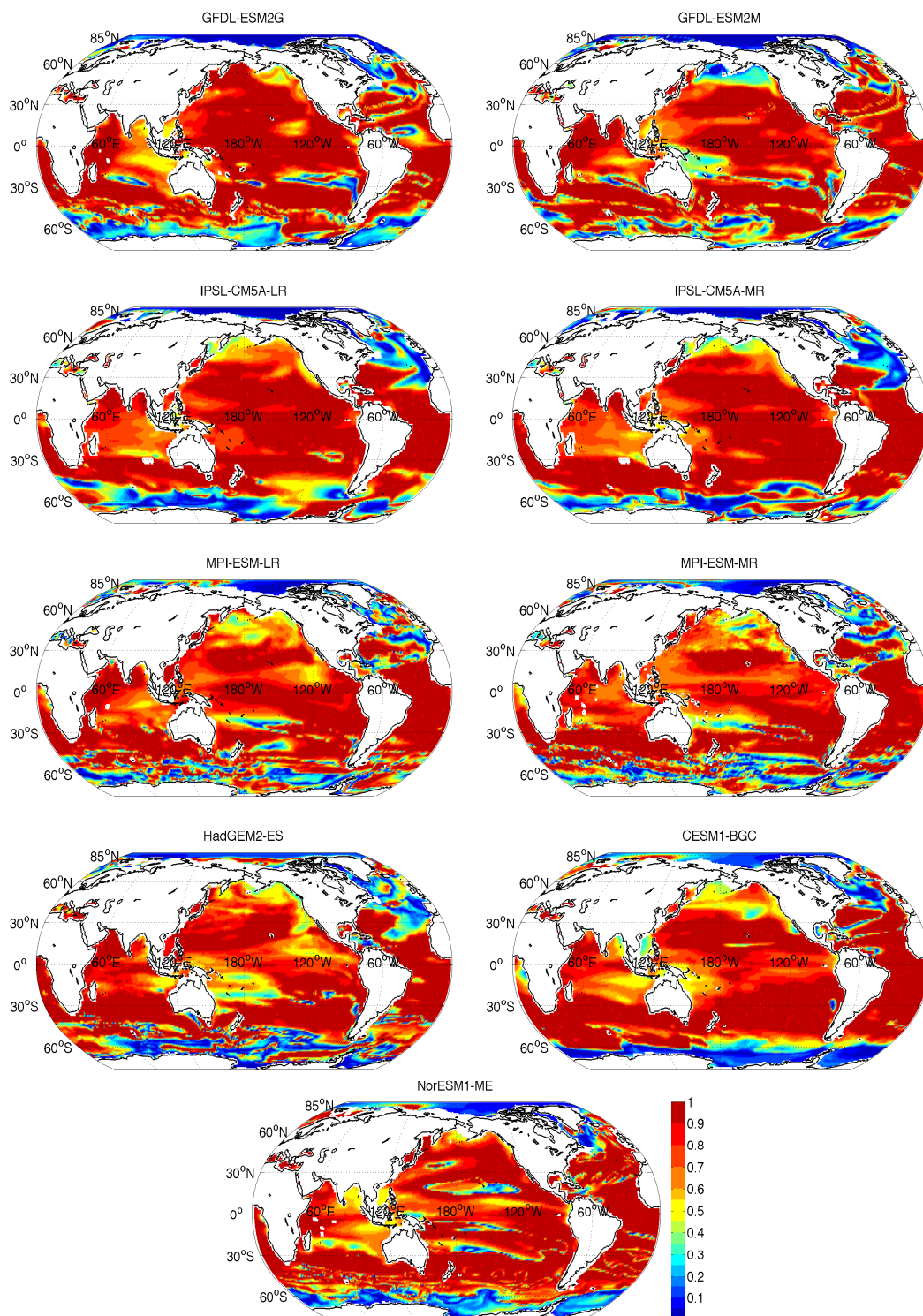


Figure S2. Fractional contribution of temperature to the stratification change from the 1990s to the 2090s is shown for each model.

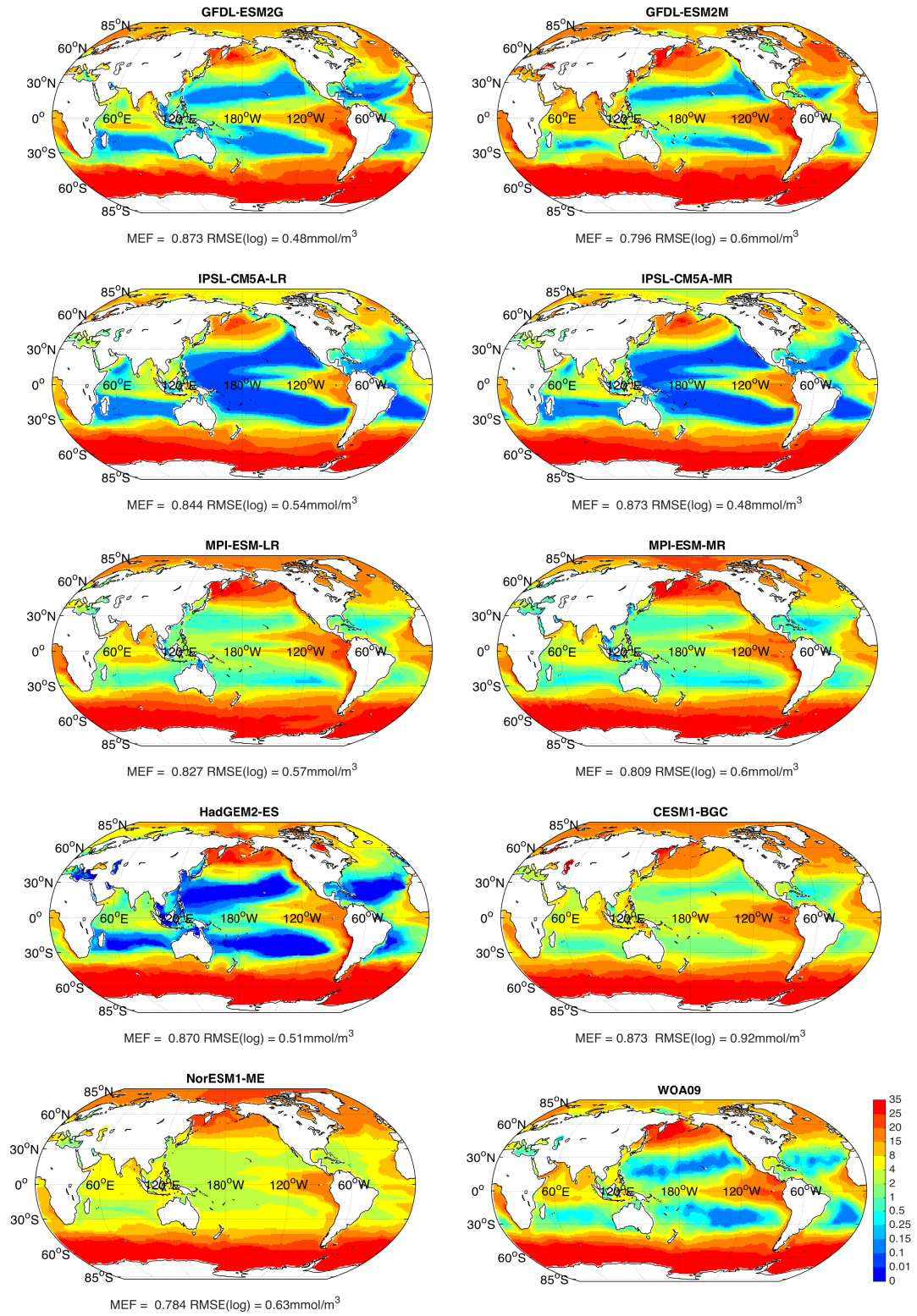


Figure S3. Mean nitrate concentrations in the first 100 m for the 1990s, the modelling efficiency (MEF) (Stow et al., 2009) and logarithmic transformed root mean square error (RMSE) are indicated relative to observations from the WOA2009.

Supplementary References:

Stow, C. A., Jolliff, J., McGillicuddy, D. J., Doney, S. C., Allen, J. I., Friedrichs, M. A. M., Rose, K. A., and Wallheadg, P.: Skill assessment for coupled biological/physical models of marine systems, *Journal of Marine Systems*, 76, 4-15, 2009.