Auxiliary material for
Global sea-surface nitrate fields estimated from remotely sensed sea-surface
temperature, chlorophyll and modeled mixed layer depth

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Introduction

This auxiliary material contains one supplementary Figure and one
supplementary data set. Figure fs01 shows the results of the error analysis
described in section 3.3 Error analysis. The data set is a netCDF file, “ds01.nc”,
that contains local coefficients obtained from the linear regression, \( \beta_{sst}, \beta_{MLD}, \beta_{Chl} \)
\( C \), for each oceanic pixel on a 1° x 1° resolution grid. These coefficients can be
combined with data from SST, surface Chl, and MLD to estimate surface nitrate
concentrations in the global ocean following Equation 2.

Data
1. ds01.nc: netCDF file of 6 variables (var) and 2 dimensions (dim) with local
coefficients for global nitrate estimation.

1.1 var1 (dim1): Longitude (size[360 1])
1.2 var2: (dim2) Latitude (size[180 1])
1.3 var3: Constant coefficient \( C \) (size[360 180])
1.4 var4: SST coefficient (size[360 180])
1.5 var5: MLD coefficient (size[360 180])
1.6 var6: Chl coefficient (size[360 180])

Figures
fs01.pdf - Monthly predicted original (green continuous line) and predictions
obtained with high (a = 1, red continuous line “noisy”), medium (a = 0.25, cyan
continuous line noisy025), and low (a = 0.01, black continuous line “noisy01”) noise levels added to the predictor datasets of nitrate concentrations for HOT
(a), BATS (b), and Munida (c) from January 2005 to December 2010. In-situ data:
blue dashed line. (d) Global distribution of relative differences between original
predicted nitrate (Figure 1a) and nitrate predicted with the maximum estimated
random error induced in the predictive data set (a=0.01).