

Data

---

12-2018

## **Associated dataset: Ocean circulation causes strong variability in the Mid-Atlantic Bight nitrogen budget**

Marjorie A.M. Friedrichs

*Virginia Institute of Marine Science, marjy@vims.edu*

Pierre St-Laurent

*Virginia Institute of Marine Science, pst-laurent@vims.edu*

Follow this and additional works at: <https://scholarworks.wm.edu/data>



Part of the [Oceanography Commons](#)

---

### **Recommended Citation**

Friedrichs, Marjorie A.M. and St-Laurent, Pierre, "Associated dataset: Ocean circulation causes strong variability in the Mid-Atlantic Bight nitrogen budget" (2018).

<https://doi.org/10.25773/2f36-pn56>

This Data is brought to you for free and open access by W&M ScholarWorks. It has been accepted for inclusion in Data by an authorized administrator of W&M ScholarWorks. For more information, please contact [scholarworks@wm.edu](mailto:scholarworks@wm.edu).

## [ACCESS FULL DATASET HERE](#)

Associated dataset: Ocean circulation causes strong variability in the Mid-Atlantic Bight nitrogen budget

Marjorie A.M. Friedrichs and Pierre St-Laurent

Virginia Institute of Marine Science (VIMS), College of William & Mary

### Academic Department and/or Research Group:

Biological Sciences Department, VIMS

### Publication Date:

December 2018

**Description:** *Include information of data format and file types, software required to run/analyze files, and information about data collection methods, site location, etc.*

*This dataset features the results from the numerical simulation described in the associated publication (Friedrichs et al.). The simulation results are in the standard, self-documented NetCDF format (extension .nc); see <https://www.unidata.ucar.edu/software/netcdf/> for more information. Files in this format can be manipulated and displayed by a wide range of freely available software. The results from the simulation are divided into monthly files (suffix \_0001 to \_0061) of two types. The first type holds time-averaged model fields (e.g., ocean\_avg\_0001.nc) and the second type holds time-averaged diagnostics (e.g., ocean\_dia\_0001.nc). Detailed information about the open source numerical model used in the study (Regional Ocean Modeling System, ROMS) is available at [www.myroms.org](http://www.myroms.org).*

**File Description Table:** *Use this table to describe your individual files and/or folders, add rows as needed.*

File Name	Description
ocean_avg_00xx.nc	Time-averaged oceanic fields (Jan. 2004 to Dec. 2008). Each file contains 30 days worth of results and the fields have a temporal resolution of 1 day.
ocean_dia_00xx.nc	Time-averaged oceanic diagnostic fields (Jan. 2004 to Dec. 2008). Each file contains 30 days worth of results and the diagnostics have a temporal resolution of 3 days. Diagnostics *_hadv, *_vadv, *_rate, *_vdiff, P_Production, NO3_uptake and C_excess_uptake are vertically-integrated over the cell's thickness (units per square meter).

**Abstract:** *Include if data have a unique abstract*

*The dataset includes model outputs used in the associated publication (Friedrichs et al.), which used the United States Eastern Continental Shelf (USECoS) biogeochemical model embedded in the Regional-Ocean-Modeling-System (ROMS) to examine the impact of the oceanic circulation on the nitrogen budget of the Mid-Atlantic Bight (MAB). The model simulation covers the period 2004 to 2008 and is fully described in the associated publication. The model simulation highlights that the horizontal along-shelf and across-shelf fluxes dominate the spatiotemporal variability of net community production (NCP) in the MAB. The highest NCP is found in a year when inorganic nitrogen entering from across the continental slope is high and terrestrial inputs are low.*

**DOI:** *Please indicate if you would like a DOI assigned to this dataset*

*Yes, we would like a DOI assigned to this dataset.*

**Funding:** *Acknowledge your funding source, including grant # if applicable*

*This work was supported by NASA Headquarters under the NASA Earth and Space Science Fellowship Program (NNX10AN50H) and the NASA Interdisciplinary Science Program (NNX11AD47G and NNX14AF93G). This work was performed using High Performance Computing facilities at the College of William & Mary, which were provided by contributions from the National Science Foundation, the Commonwealth of Virginia Equipment Trust Fund and the Office of Naval Research.*

**Keywords:** *Please list terms to be used for indexing your data*

*Mid-Atlantic Bight, nitrogen budget, continental shelf, net community production, biogeochemical circulation model, regional ocean modeling system*

**Associated Publications:**

*Friedrichs, M.A.M., P. St-Laurent, Y. Xiao, E. Hofmann, K. Hyde, A. Mannino, R.G. Najjar, D. Narvaez, S.R. Signorini, H. Tian, J. Wilkin, Y. Yao and J. Xue, Ocean circulation causes strong variability in the Mid-Atlantic Bight nitrogen budget, manuscript accepted for publication in Journal of Geophysical Research: Oceans, <https://doi.org/10.1029/2018JC014424>*

**Funding:**

*This work was supported by NASA Headquarters under the NASA Earth and Space Science Fellowship Program (NNX10AN50H) and the NASA Interdisciplinary Science Program (NNX11AD47G and NNX14AF93G). This work was performed using High Performance Computing facilities at the College of William & Mary, which were provided by contributions from the National Science Foundation, the Commonwealth of Virginia Equipment Trust Fund and the Office of Naval Research.*

Marjorie A. M. Friedrichs ORCID ID: 0000-0003-2828-7595

Pierre St-Laurent ORCID ID: 0000-0002-1700-9509