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A Model Archive for a Coupled Hydrodynamic-Sediment Transport-Biogeochemistry Model for the Chesapeake Bay, USA

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Dataset Information

A Model Archive for a Coupled Hydrodynamic-Sediment Transport-Biogeochemistry Model for the Chesapeake Bay, USA

Authors: *Julia Moriarty (VIMS; University of Colorado Boulder); Marjorie Friedrichs (VIMS); Courtney Harris (VIMS)*

Academic Department and/or Research Group: *Physical and Biological Sciences, VIMS*

Title of Dataset: *A Model Archive for a Coupled Hydrodynamic-Sediment Transport-Biogeochemistry Model for the Chesapeake Bay, USA*

Publication Date: *2020*

Description: *These files are compressed versions of input files, model code, and output used for the associated publication in Estuaries and Coasts (see below). Compressed files with the .gz file extension can be opened with Gzip GNU software (open source). Compressed files with the .tar file extension can be opened with Gzip Tar software (open source). Many of the input and output files use the NetCDF (Network Common Data Form) file format. These have "nc" as a file extension and can be read using a variety of open source tools: see http://www.unidata.ucar.edu/software/netcdf/docs/ . For information about the Regional Ocean Modeling System (ROMS), its model code and input / output, see www.myroms.org. The study site is the Chesapeake Bay, USA.*

***File List**:*

Input File – Model Grid: chesroms_grd_smoother_msl_mes.nc.gz

Input File – Forcing at Open Boundary: cb_bry_2000to2004_0001.nc.gz

Input File – Atmospheric Forcing (Humidity): Ches_Qair_2000to2004.nc.gz

Input File – Atmospheric Forcing (Temperature): Ches_Tair_2000to2004.nc.gz

Input File – Atmospheric Forcing (Pressure): Ches_Pair_2000to2004.nc.gz

Input File – Atmospheric Forcing (Precipitation): Ches_rain_2000to2004.nc.gz

Input File – Atmospheric Forcing (Shortwave Radiation): Ches_swrad_2000to2004.nc.gz

Input File – Atmospheric Forcing (Longwave Radiation): Ches_lwrad_2000to2004.nc.gz

Input File – Atmospheric Forcing (Wind in Xi Direction): Ches_Uwind_2000to2004.nc.gz

Input File – Atmospheric Forcing (Wind in Eta Direction): Ches_Vwind_2000to2004.nc.gz

Input File – Atmospheric Forcing (Chemical Deposition): ChesROMS_atmo_nit_dep_forcing_from_WQSTM_1985_2005_sce.nc.gz

Input File – River Forcing: cb_river_2000to2004_0002.nc.gz

Input File - Tidal Forcing (2002): chesroms_tides_adcirc7_2002.nc.gz

Input File - Tidal Forcing (2003): chesroms_tides_adcirc7_2003.nc.gz

Input File - Wave Forcing (2002): cb_waves_0005_2002.nc.gz

Input File - Wave Forcing (2003): cb_waves_0005_2003.nc.gz

Input File – Model Run Information for the Standard Model Run (2002): ocean_standard_2002.in.gz

Input File – Model Run Information for the No-resuspension Model Run (2002): ocean_noresusp_2002.in.gz

Input File – Sediment Transport Information for the Standard Model Runs (2002 & 2003): sed_standard.in.gz

Input File – Sediment Transport Information for the No-resuspension Model Runs (2002 & 2003): sed_noresusp.in.gz

Input File – Water Column Biogeochemistry Information for all model runs: bio_standard.in.gz

Input File – Model Initialization for the 2002 model runs: cb_init_0085_from0084.gz

Input File – Model Initialization for the 2003 model runs: cb_init_0087_from0085.gz

Input File – List of variables: varinfo.dat.gz

Model Code– Script to Compile Model: build.bash.gz

Model Code– Model Code: trunk_cb.tar

Model Output– Model Output for Standard Model Run (2002): Results_cb_standard_2002.tar

Model Output– Model Output for Standard Model Run (2003): Results_cb_standard_2003.tar

Model Output– Model Output for No-resuspension Model Run (2002): Results_cb_no_resuspension_2002.tar

Model Output– Model Output for No-resuspension Model Run (2003): Results_cb_no_resuspension_2003.tar

DOI: 10.25773/hamz-zc50

DATALINK: Go to: https://scholarworks.wm.edu/data/419/

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Keywords: *Chesapeake Bay, USA; sediment transport; biogeochemistry; numerical modeling; oceanography; Regional Ocean Modeling System (ROMS); hypoxia; oxygen; ammonium; particulate organic carbon remineralization; primary production; resuspension; estuarine circulation*

Associated Publications: *Moriarty, J.M., Friedrichs, M.A.M., Harris, C.K. (accepted with minor revisions, 2020). Seabed Resuspension in the Chesapeake Bay: Implications for Biogeochemical Cycling and Hypoxia. Estuaries and Coasts. IN PRESS*

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