

Model Developer/Institution: Rob Hetland /Texas A&M
Contact/Institution: Rob Hetland /Texas A&M
Water Body: Gulf of Mexico
Model Name: Regional Ocean Modeling System (ROMS)
Model Type: 3D dynamically coupled
Model Domain: The Texas-Louisiana continental shelf from the TX/LA boarder to about the MS/AL boarder
 a) Inshore distance: 0 km
 b) Nearest offshore distance: 0 km
 c) Farthest offshore distance: 200 km
 d) Alongshore distance: 700 km
Year of Model Development/Application: 1990 to 2009
Model Grid:
 a) Grid type: Curvilinear
 b) Grid resolution (min, avg, max): 940 m / 21 km / ~ 2 km in the areas of interest.
Purpose of Model: Examine physical controls on the formation and destrucion of seasonal hypoxia on the TX-LA shelf.
Dissolved/Particulate Parameters Simulated: Temperature, salinity, nutrients (N+P), phytoplankton, zooplankton
Dissolved/Particulate Parameters Available in Model

Code: Detritus and noncohesive sediment.
 River discharge and atmospheric and solar parameteres (wind speed and direction, air temp, cloudiness, etc.)
Data Used for Model Forcing: Nutrient load, Sediment load
Data Assimilated: None
Data Needs: For forcing, data described above (already obtained by us). For validation, any data Is usefull.
Simulation Period: 20 yr
Validation with Data?: Hydrography, moored currents and tracers, satellite derived Chla, some sediment accumulation rates.
Used for Forecasting?: In 2009.
What kind of review has model undergone?: Published in the Journal of Marine Research.
 Hetland, R. D. and S. F. DiMarco, (2007) How does the character of oxygen demand control the structure of hypoxia on the Texas-Louisiana continental shelf? J. Mar. Sys.,doi:10.1016/j.jmarsys.2007.03.002.
Reference:
Is GIS shapefile of modeled area available?: No
Comments: Developed as part of the NOAA funded Mechanisms Controlling Hypoxia program.

 Robert Hetland, 3146 TAMU, College Station, TX 77843-3146, 979-458-0096, hetland@tamu.edu

Note: If modeler or contact name is being submitted for the first time, please enter contact information here (e.g., address, phone number, e-mail address).

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| <i>Model Developer/Institution:</i> | Dubravko Justic, Louisiana State University |
| <i>Contact/Institution:</i> | Dubravko Justic, Louisiana State University |
| <i>Water Body:</i> | Northern Gulf of Mexico |
| <i>Model Name:</i> | Gulf Hypoxia Model |
| <i>Model Type:</i> | Box model |
| <i>Model Domain:</i> | Station C6 located in the core of the Gulf hypoxic zone (-90.2768; 28.5144) |
| <i>a) Inshore distance:</i> | |
| <i>b) Nearest offshore distance:</i> | |
| <i>c) Farthest offshore distance:</i> | |
| <i>d) Alongshore distance:</i> | |
| <i>Year of Model Development/Application:</i> | 1996, updated 2002 |
| <i>Model Grid:</i> | |
| <i>a) Grid type:</i> | |
| <i>b) Grid resolution (min, avg, max):</i> | |
| <i>Purpose of Model:</i> | Predict changes in surface and bottom DO at a single station |
| <i>Dissolved/Particulate Parameters Simulated:</i> | surface and bottom DO, total organic carbon |
| <i>Dissolved/Particulate Parameters Available in Model</i> | |
| <i>Code:</i> | See Table 1 in Justic et al. 2002 |
| <i>Data Used for Model Forcing:</i> | Mississippi River discharge and nitrate flux, ambient surface and bottom temperatures, surface winds |
| <i>Data Assimilated:</i> | |
| <i>Data Needs:</i> | Same as for model forcing + surface and bottom DO for validation |
| <i>Simulation Period:</i> | 45 years |
| <i>Validation with Data?:</i> | Yes |
| <i>Used for Forecasting?:</i> | Yes |
| <i>What kind of review has model undergone?:</i> | Published in peer review journals (see below). |
| | Justic, D., Rabalais, N. N., Turner, R. E. 1996. Effects of climate change on hypoxia in coastal waters: a doubled CO ₂ scenario for the northern Gulf of Mexico. <i>Limnology and Oceanography</i> 41: 992-1003. |
| | Justic, D., N. N. Rabalais and R. E. Turner. 2002. Modeling the impacts of decadal changes in riverine nutrient fluxes on coastal eutrophication near the Mississippi River delta. <i>Ecological Modelling</i> 152: 33-46. |
| | Justic, D., Rabalais, N. N., Turner, R. E. 2003. Simulated responses of the Gulf of Mexico hypoxia to variations in climate and anthropogenic nutrient loading. <i>Journal of Marine Systems</i> 42: 115-126. |
| <i>Reference:</i> | |
| <i>Is GIS shapefile of modeled area available?:</i> | No |

Dubravko Justic, 2221 Energy, Coast and Environment Bldg., Louisiana State University, Baton Rouge, Louisiana 70803; Tel: 225-578-6394; Email: djust1@lsu.edu

Note: If modeler or contact name is being submitted for the first time, please enter contact information here (e.g., address, phone number, e-mail address).

Model Developer/Institution: Dubravko Justic and Lixia Wang, Louisiana State University
Contact/Institution: Dubravko Justic, Louisiana State University
Water Body: Northern Gulf of Mexico
Model Name: FVCOM-LATEX
Model Type: 3D dynamically coupled
Model Domain: Louisiana-Texas continental shelf, from Mobile, AL, to Galveston, TX
a) Inshore distance: 0 km
b) Nearest offshore distance: 60 km
c) Farthest offshore distance: 240 km
d) Alongshore distance: 680 km
Year of Model Development/Application: 2002 - present
Model Grid:
a) Grid type: Unstructured grid
b) Grid resolution (min, avg, max): 550m - 10km, ~ 1.5 km across the hypoxic zone
Purpose of Model: Examine physical and biological controls on hypoxia on the TX-LA shelf
Dissolved/Particulate Parameters Simulated: Temperature, salinity, dissolved oxygen, nutrients, phytoplankton, CBOD
Dissolved/Particulate Parameters Available in Model Code: Finite Volume Coastal Ocean Model (FVCOM); Water Quality Analysis Simulation Program (WASP)
Data Used for Model Forcing: River discharge and atmospheric parameters (wind speed and direction, air temp, cloudiness, etc)
Data Assimilated: None
Data Needs: Data used for model forcing + calibration/validation data (ambient water temperature, salinity, currents, dissolved oxygen, nutrients, Chlorophyll a, MODIS imagery)
Simulation Period: 2002 was used for calibration/validation; 2003-present in works
Validation with Data?: Extensive
Used for Forecasting?: No
What kind of review has model undergone?: Published in the Continental Shelf Research
Reference:

paper1

Paper2

Is GIS shapefile of modeled area available?: No
Comments: Model development was funded in part by NOAA-CSCOR and NGI

Dubravko Justic, 2221 Energy, Coast and Environment Bldg., Louisiana State University, Baton Rouge, LA 70803; Tel: 225-578-6394; Email: djusti1@lsu.edu

Note: If modeler or contact name is being submitted for the first time, please enter contact information here (e.g., address, phone number, e-mail address).

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| <i>Model Developer/Institution:</i> | Donald Scavia/University of Michigan |
| <i>Contact/Institution:</i> | Donald Scavia or Mary Anne Evans/University of Michigan |
| <i>Water Body:</i> | Northern Gulf of Mexico coastal waters |
| <i>Model Name:</i> | "The best model ever" |
| <i>Model Type:</i> | 1D long-shore dissolved oxygen model |
| <i>Model Domain:</i> | Coastal region west of the Mississippi River mouth |
| <i>a) Inshore distance:</i> | 10km |
| <i>b) Nearest offshore distance:</i> | 60km |
| <i>c) Farthest offshore distance:</i> | 60km |
| <i>d) Alongshore distance:</i> | 600km |
| <i>Year of Model Development/Application:</i> | 2003/2004,2006-2010 |
| <i>Model Grid:</i> | |
| <i>a) Grid type:</i> | Linear |
| <i>b) Grid resolution (min, avg, max):</i> | Continuous |
| <i>Purpose of Model:</i> | Assess impact of nutrient loads on hypoxia |
| <i>Dissolved/Particulate Parameters Simulated:</i> | Organic Matter, Dissolved Oxygen |
| <i>Dissolved/Particulate Parameters Available in Model</i> | |
| <i>Code:</i> | Organic Matter, Dissolved Oxygen |
| <i>Data Used for Model Forcing:</i> | Nutrient Loads from MS basin |
| <i>Data Assimilated:</i> | none |
| <i>Data Needs:</i> | nutrient loads, historic hypoxic area (for calibration) |
| <i>Simulation Period:</i> | 52 years (1955-2007) |
| <i>Validation with Data?:</i> | Yes |
| <i>Used for Forecasting?:</i> | Yes |
| <i>What kind of review has model undergone?:</i> | Published in <i>Limnol. Oceanogr.</i> , <i>Estuaries</i> , <i>Env. Sci. Technol.</i> , and <i>Environ. Res. Letters</i> . journals |
| <i>Reference:</i> | <i>Limnol. Oceanogr.</i> 48(3): 951-956.; <i>Estuaries</i> 27(3):419-425; <i>Limnol. Oceanogr.</i> 52(2): 856-861; <i>Env. Sci. Technol.</i> 41:8111-8117; <i>Environ. Sci. Technol.</i> 44(15):5836-5841; <i>Environ. Res. Letters.</i> doi:10.1088/1748- |
| <i>Development Stage:</i> | Used for annual forecasts since 2002 |
| <i>Boundary Conditions:</i> | Assumes oxygen saturation at model origin |
| <i>Model Time-Step:</i> | Steady state, model updated annually |
| <i>Management Application:</i> | Annual forecasts of hypoxic area and calculation of nutrient load limits for desired hypoxic areas Model has also been used successfully for the Chesapeake Bay (<i>Estuaries and Coasts</i> 29(4) 674-684; <i>Estuaries and Coasts</i> 33:629-639) |
| <i>Comments:</i> | |

Note: If modeler or contact name is being submitted for the first time, please enter contact information here (e.g., address, phone number, e-mail address).

Donald Scavia, University of Michigan, 440 Church St., Ann Arbor, MI 48103; 734-615-4860; scavia@umich.edu; Mary Anne Evans, University of Michigan, 440 Church St., Ann Arbor, MI 48103; 634-763-6280, mevans@umich.edu

Model Developer/Institution: R.E.Turner / Louisiana State University
Contact/Institution:
Water Body: northern Gulf of Mexico
Model Name: none
Model Type: statistical
Model Domain:
 a) *Inshore distance:* shoreline
 b) *Nearest offshore distance:* 200 m isobath
 c) *Farthest offshore distance:* 100 km
 d) *Alongshore distance:* 300 km
Year of Model Development/Application: 2004
Model Grid:
 a) *Grid type:* NA
 b) *Grid resolution (min, avg, max):* NA
Purpose of Model: predict the size of the summertime hypoxic zone
Dissolved/Particulate Parameters Simulated: oxygen
Dissolved/Particulate Parameters Available in Model Code: nitrate
Data Used for Model Forcing: nitrate;
Data Assimilated: na
Data Needs: monthly flux of ntrate in the Mississippi River watershed to the GOM
Simulation Period: 1 prediction for July/August; multiple forecasts under development
Validation with Data?: yes
Used for Forecasting?: yes
What kind of review has model undergone?: published: Turner, R. E., N. N. Rabalais, and D. Justic 2006. Predicting summer hypoxia in the Northern Gulf of Mexico: Riverine N, P and Si loading. Marine Pollution Bulletin 52: 139-148.
 Turner, R. E., N. N. Rabalais, and D. Justic 2008. Gulf of Mexico hypoxia: Alternate states and a legacy. **Environmental Science and Technology** 42: 2323-2327.
Reference:
Is GIS shapefile of modeled area available?: na
Comments: prediction is done 1-3 months before the hypoxia cruises. Accuracy was 99% in 2006
 model is updated annually, to include other variables, which have not proved useful over 10 years;

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| <i>Model Developer/Institution:</i> | Oregon Sea Grant |
| <i>Contact/Institution:</i> | Stephen Brandt / Sarah Kolesar |
| <i>Water Body:</i> | Gulf of Mexico |
| <i>Model Name:</i> | Growth Rate Prediciton Model |
| <i>Model Type:</i> | Fish bioenergetics model |
| <i>Model Domain:</i> | |
| <i>a) Inshore distance:</i> | NA |
| <i>b) Nearest offshore distance:</i> | |
| <i>c) Farthest offshore distance:</i> | 150km |
| <i>d) Alongshore distance:</i> | 150km |
| <i>Year of Model Development/Application:</i> | 2003 - on going |
| <i>Model Grid:</i> | |
| <i>a) Grid type:</i> | discrete cells |
| <i>b) Grid resolution (min, avg, max):</i> | 50m x 1m cells |
| <i>Purpose of Model:</i> | food web interactions between fish, prey, temperature and dissolved oxygen |
| <i>Dissolved/Particulate Parameters Simulated:</i> | fish consumption and metabolism |
| <i>Dissolved/Particulate Parameters Available in Model Code:</i> | temperature, dissolved oxygen, salinity, prey density |
| <i>Data Used for Model Forcing:</i> | temperature, dissolved oxygen |
| <i>Data Assimilated:</i> | |
| <i>Data Needs:</i> | temperature, dissolved oxygen, salinity, prey density, fish bioenergetics parameters |
| <i>Simulation Period:</i> | day / night |
| <i>Validation with Data?:</i> | models are based on bioenergetics equations derived from experiments |
| <i>Used for Forecasting?:</i> | fish growth rate prediction |
| <i>What kind of review has model undergone?:</i> | publication |
| <i>Reference:</i> | Zhang et al. 2009 JEMBE 381: S80-S91 |
| <i>Is GIS shapefile of modeled area available?:</i> | no |
| <i>Coupling with other models?:</i> | fish bioenergetics model |
| <i>Development Stage:</i> | Reseearch |
| <i>Boundary Conditions:</i> | |
| <i>Model Time-Step:</i> | day / night |
| <i>Management Application:</i> | fish predator-prey and hypoxia effects |
| <i>Comments:</i> | |

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Model Developer/Institution: Richard Patchen, NOAA/NOS/CSDL (formerly Dynalysis of Princeton)
Contact/Institution: Richard Patchen, NOAA/NOS/CSDL
Water Body: Gulf of Mexico
Model Name: NOS Gulf of Mexico (NGOM) - formerly PDOM-A
Model Type: Princeton Ocean Model (POM)
Model Domain: Entire Gulf of Mexico, including Northern Caribbean and Straits of Florida
 a) Inshore distance:
 b) Nearest offshore distance:
 c) Farthest offshore distance:
 d) Alongshore distance:
Year of Model Development/Application: Continued Development and Application from 1992 to present
Model Grid:
 a) Grid type: Stuctured Grid (BF Curvilinear)
 b) Grid resolution (min, avg, max): 2-6 Km
Purpose of Model: Nowcast/Forecast System to support NOS and others needs for the physical processes in the Gulf
Dissolved/Particulate Parameters Simulated: Salinity
Dissolved/Particulate Parameters Available in Code: Salinity
Data Used for Model Forcing: COAMPS Winds & Atm Pres; USGS &USACE Rivers; and MODAS T&S
Data Assimilated: T&S derived for SSTs and Altimetry
Data Needs: See above
Simulation Period: Each day an Update/Nowcast, then a 48 hr Forecast; once a week a two month Long range Forecast
Validation with Data?: Extensive comparisons
Used for Forecasting?: Yes
What kind of review has model undergone?: NOS, MMS and Navy Scientific reviews
 (with J. P. Blaha, G. H. Born, N.L. Guinasso, Jr., H. J. Herring, G. A. Jacobs, F. J. Kelly, R. R. Leben, R. D. Martin, Jr., G. L. Mellor, P. P. Niiler, M. R. Parke, K. Schaudt, N. W. Scheffner, D. K. Shum, C. Ohlmann, W. Sturges, III, G. L. Weatherly, D. Webb, and H. J. White). 2000. Gulf of Mexico Ocean Monitoring System. *Oceanography*, 13, 2, 10-17.
Reference:
Is GIS shapefile of modeled area available?: NO
Comments: <http://nauticalcharts.noaa.gov/csdl/op/dgom.m.html>

Note: If modeler or contact name is being submitted for the first time, please enter contact information here (e.g., address, phone number, e-mail address).

Richard Patchen NOAA/NOS/Coast Survey Development Lab SSMC3, Room 7826 1315 East West Hwy Silver Spring MD 20910; 301-713-2650 x118; rich.patchen@noaa.gov

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1315 East West Highway, Silver Spring, MD 20910, 301-713-2809 x 102, eugene.wei@noaa.gov, jiangtao.xu@noaa.gov

Model Developer/Institution: Dong S. Ko/Naval Research Laboratory; Barry E. Herchenroder/Lockheed-Martin for EPA; Rick Greene/EPA-ORD
Contact/Institution: ko@nrlssc.navy.mil; herchenroder.barry@epa.gov; green.rick@epa.gov
Water Body: Louisiana Coastal Water
Model Name: EPACOM_GEM
Model Type: Fully 3D hydrodynamic biogeochemical hypoxia model
Model Domain: From coast to deep water and from TX/LA boarder to MS/AL boarder
a) Inshore distance:
b) Nearest offshore distance:
c) Farthest offshore distance: ~ 300 km
d) Alongshore distance: ~ 600 km
Year of Model Development/Application: 2007 - 2011
Model Grid:
a) Grid type: Structured lat-lon grid
b) Grid resolution (min, avg, max): ~2 km
Purpose of Model: Fully 3D simulation of physical and biogeochemical processes including dissolved oxygen Temperature, salinity, NO₃, NH₄, PO₄, DIC, six groups of phytoplanktons, zooplankton, six types of OMs and DO
Dissolved/Particulate Parameters Simulated: All above
Dissolved/Particulate Parameters Available in Code: Synoptic 3D circulation including tides, river flow, solar radiation, wind speed and seasonal river nutrient load
Data Used for Model Forcing: Circulation model assimilates satellite altimeter data and MCSST
Data Assimilated:

All data are collected for the model simulations but need better initial conditions. All data that can be used for validation is useful. For running the model: same as Data Used for Model Forcing. We also need credible lateral boundary condition data for each bio-geo_chemistry species. Additional CDM data for running the model as well as validation. Need obs data at more horizontal locations and time-periods.

Data Needs:
Simulation Period: 2003 - 2009
Validation with Data?: EPA in-situ observation
Used for Forecasting?: Not yet
What kind of review has model undergone?: Original water column-sediment model published (Eldridge and Roelke, 2010)

Ko, D.S., P.J. Martin, C.D. Rowley, and R.H. Preller, A real-time coastal ocean prediction experiment for MREA04, J. Marine Systems, 69, 17-28, doi:10.1016/j.jmarsys.2007.02.022, 2008. (for circulation model).
Eldridge, Peter, M and D.L. Roelke, D.L., Origins and Scales of Hypoxia on the Louisiana Shelf: Importance of Seasonal Plankton Dynamics and River Nutrients and Discharge, Ecol. Model., 221, 1028-1042, 2010.

Reference:
Is GIS shapefile of modeled area available?: No
Coupling with other models?: Coupled to the Louisiana Coastal circulation model
Development Stage: in development
Boundary Conditions: Use regional IASNFS prediction

Model Time-Step:

300 seconds

Management Application:

Note: If modeler or contact name is being submitted for the first time, please enter contact information here (e.g., address, phone number, e-mail address).

After 3-D version of model has been validated, the model results will be used by EPA to help guide their efforts to reduce N and P coming into the Gulf.

Dong S. Ko/ NRL Code 7320/ Stennis Space Center, MS 39529/ ko@nrlssc.navy.mil ; Barry E. Herchenroder, EPA NCC, N-127-01, 109 TW Alexander Drive, Durham, NC 27711, 919-541-1991, herchenroder.barry@epa.gov . Rick Greene, EPA Gulf Ecology Division, Gulf Breeze, FL 32570, 850-934-2497, greenes.rick@epa.gov

U.S. EPA, Office of Research and Development, National Health and Environmental Effects Research Laboratory -- (Mid-Continent Ecology Division (MED) and Gulf Ecology Division (GED)). *Collaborators include the U.S. Navy Research Laboratory, U.S. EPA Environmental Modeling and Visualization Laboratory, and the U.S. EPA*

Model Developer/Institution: Russell G. Kreis, Jr. (MED) and Richard M. Greene (GED)

Contact/Institution: Gulf of Mexico/Louisiana coastal shelf

Water Body: GoMDOM (Gulf of Mexico Dissolved Oxygen Model)

Model Name: 3D high resolution dynamic eutrophication/dissolved oxygen model -- a CE-QUAL-ICM and WASP hybrid.

Model Type:

Model Domain:

a) Inshore distance: 0 km

b) Nearest offshore distance: ~ 20 km

c) Farthest offshore distance: ~ 180 km

d) Alongshore distance: ~ 450 km

Year of Model Development/Application: 2008 - present

Model Grid:

a) Grid type: structured lat-lon grid

b) Grid resolution (min, avg, max): ~ 6 km

Purpose of Model: Will be used to evaluate the relationship between nutrient loads and area of hypoxia

Dissolved/Particulate Parameters Simulated: salinity, nutrients, dissolved oxygen, carbon, phytoplankton (diatoms and non-diatoms), zooplankton, tracer

Dissolved/Particulate Parameters Available in Code: salinity, nutrients, dissolved oxygen, carbon, phytoplankton, zooplankton, tracer

Data Used for Model Forcing: tributary loads for salinity, nutrients, carbon, and dissolved oxygen; atmospheric loads for nitrogen; water temperature, wind speed, solar radiation

Data Assimilated: none

Data Needs: tributary loads and field data for nutrients and dissolved oxygen

Simulation Period: one year per simulation, will simulate 2003-2007

Validation with Data?: Calibration/validation is presently being conducted

Used for Forecasting?: The model will be used for forecasting

What kind of review has model undergone?: The model development and results will be published in peer-reviewed journals

Reference:

Is GIS shapefile of modeled area available?: yes

Coupling with other models?: Uses hydrodynamic output from the NRL EPACOM model and atmospheric loads from CMAQ

Development Stage: calibration/corroboration

Boundary Conditions: from field data

Model Time-Step: 5-15 minutes

Management Application: Estimate the nutrient loading necessary to reduce the five-year running average areal extent of the Gulf of Mexico hypoxic zone to less than 5,000 square kilometers

Comments:

Note: If modeler or contact name is being submitted for the first time, please enter contact information here (e.g., address, phone number, e-mail address).

kreis.russell@epa.gov and greene.rick@epa.gov

Model Developer/Institution: Dong S. Ko/Naval Research Laboratory
Contact/Institution: ko@nrlssc.navy.mil
Water Body: NW Gulf of Mexico (TX/LA/MS) Coastal Water
Model Name: MsLaTex Ocean Nowcast/Forecast System
Model Type: Coastal circulation
Model Domain:
 a) *Inshore distance:*
 b) *Nearest offshore distance:*
 c) *Farthest offshore distance:* ~ 300 km
 d) *Alongshore distance:* ~ 700 km
Year of Model Development/Application:
Model Grid:
 a) *Grid type:* Structured lat-lon grid
 b) *Grid resolution (min, avg, max):* ~ 2 km
Purpose of Model: Full 3D ocean prediction
Dissolved/Particulate Parameters Simulated:
Dissolved/Particulate Parameters Available in Model Code:
Data Used for Model Forcing: Wind, tides, river flow, solar radiation and heat fluxes
Data Assimilated: Yes
Data Needs: Altimeter ssh and satellite sst
Simulation Period: Started from 2002 up-to-date
Validation with Data?: Yes
Used for Forecasting?: Yes
What kind of review has model undergone?:

Reference: D'Sa, E., M. Korobkin, and D.S. Ko, 2011: Effects of Hurricane Ike on the Louisiana-Texas coast from satellite and model data, Remote Sensing Lett., 2, 11-19, doi: 10.1080/ 01431161.2010.489057.
Is GIS shapefile of modeled area available?:
Coupling with other models?: Coupled to the NRL Intra-Americas Sea Nowcast/Forecast System (IASNFS)
Development Stage: In real-time operation at NRL
Boundary Conditions: From IASNFS
Model Time-Step: 120 seconds
Management Application:
Comments: http://www7320.nrlssc.navy.mil/IASNFS_WWW/LSUNFS_WWW/
Note: If modeler or contact name is being submitted for the first time, please enter contact information here (e.g., address, phone number, e-mail address). Dong S. Ko/ NRL Code 7320/ Stennis Space Center, MS 39529/ ko@nrlssc.navy.mil

Model Developer/Institution: Dong S. Ko/Naval Research Laboratory
Contact/Institution: ko@nrlssc.navy.mil
Water Body: Gulf of Mexico and Caribbean Sea
Model Name: Intra-Americas Sea Nowcast/Forecast System (IASNFS)
Model Type: Regional ocean prediction system
Model Domain:
 a) *Inshore distance:*
 b) *Nearest offshore distance:*
 c) *Farthest offshore distance:* ~ 2500 km
 d) *Alongshore distance:* ~ 4000 km
Year of Model Development/Application:
Model Grid:
 a) *Grid type:* Structured lat-lon grid
 b) *Grid resolution (min, avg, max):* ~ 6 km
Purpose of Model: Full 3D ocean prediction
Dissolved/Particulate Parameters Simulated:
Dissolved/Particulate Parameters Available in Model Code:
Data Used for Model Forcing: Wind, river flow, solar radiation and heat fluxes
Data Assimilated: Yes
Data Needs: Altimeter ssh and satellite sst
Simulation Period: Started from 2002 up-to-date
Validation with Data?: Yes
Used for Forecasting?: Yes
What kind of review has model undergone?:

Reference: Ko, D.S., R.H. Preller, and P.J. Martin, 2003: An experimental real-time Intra-Americas Sea Ocean Nowcast/Forecast System for coastal prediction, Proceedings, AMS 5th Conference on Coastal Atmospheric and Oceanic Prediction and Processes, 97-100. Plus more than 10 papers.
Is GIS shapefile of modeled area available?:
Coupling with other models?: Coupled to the NRL Global NCOM
Development Stage: In real-time operation at NRL
Boundary Conditions: From NRL Global NCOM
Model Time-Step: 360 seconds
Management Application:
Comments: http://www7320.nrlssc.navy.mil/IASNFS_WWW/
Note: If modeler or contact name is being submitted for the first time, please enter contact information here (e.g., address, phone number, e-mail address). Dong S. Ko/ NRL Code 7320/ Stennis Space Center, MS 39529/ ko@nrlssc.navy.mil