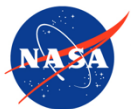


Exploring River Deltas with NASA Data: The Delta-X Mission

**DATA, MODELS, PROCESSING
TOOLS, AND PUBLICATIONS**

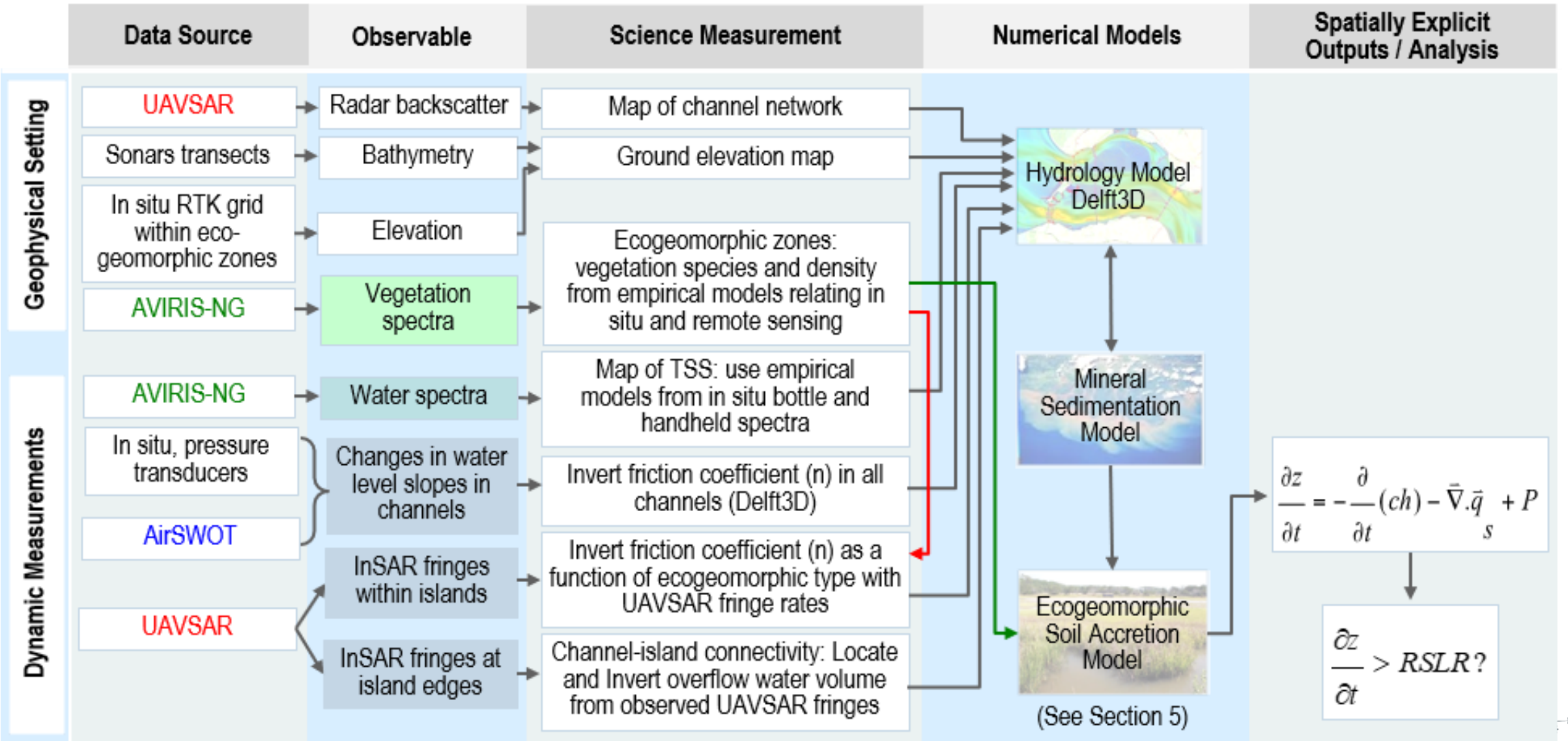
*Earthdata Webinar
June 25, 2024*



Jet Propulsion Laboratory
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Delta-X: Measurements-to-Models Flowdown





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Delta-X

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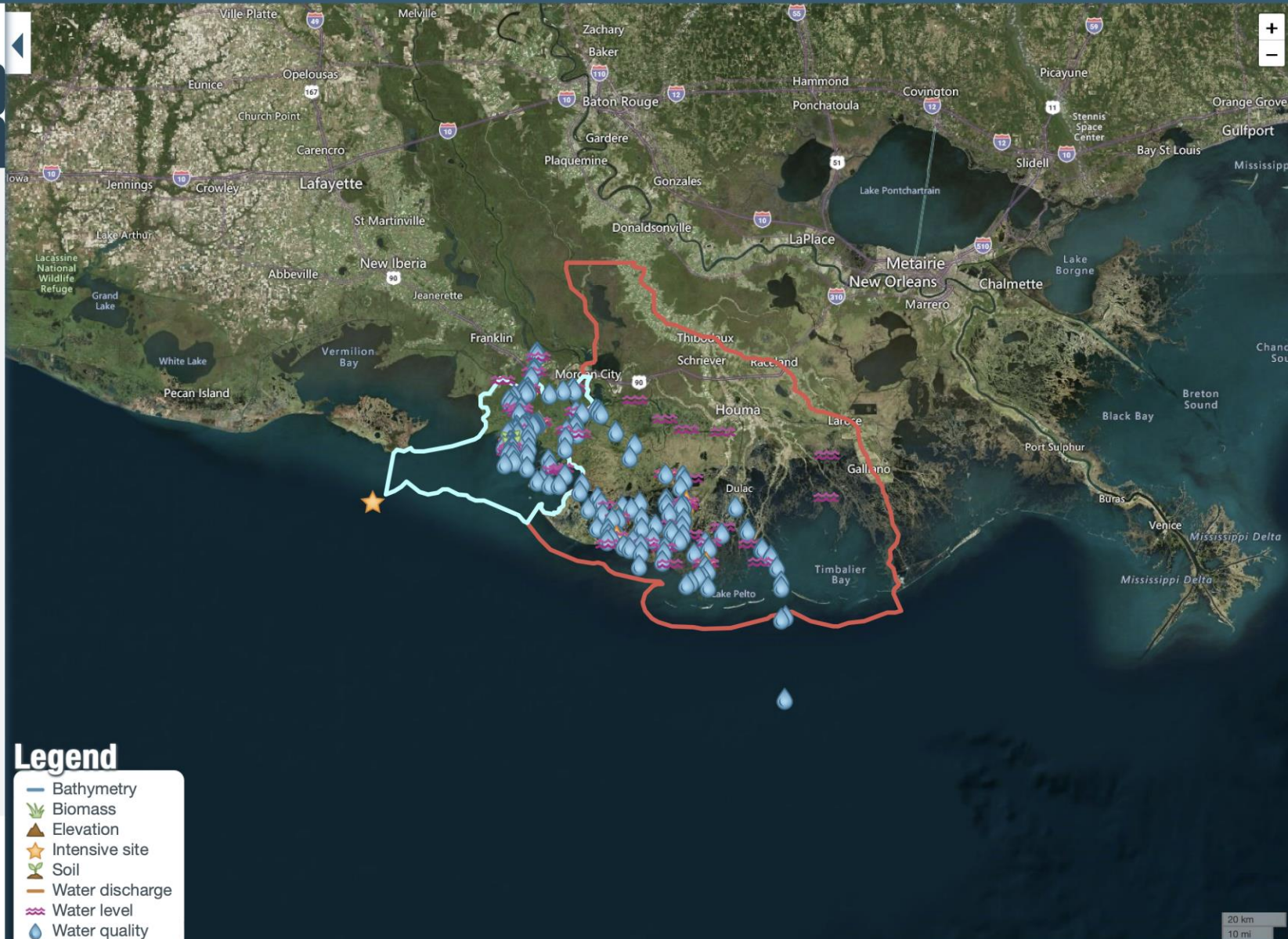
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- Spectral reflectance [download](#)
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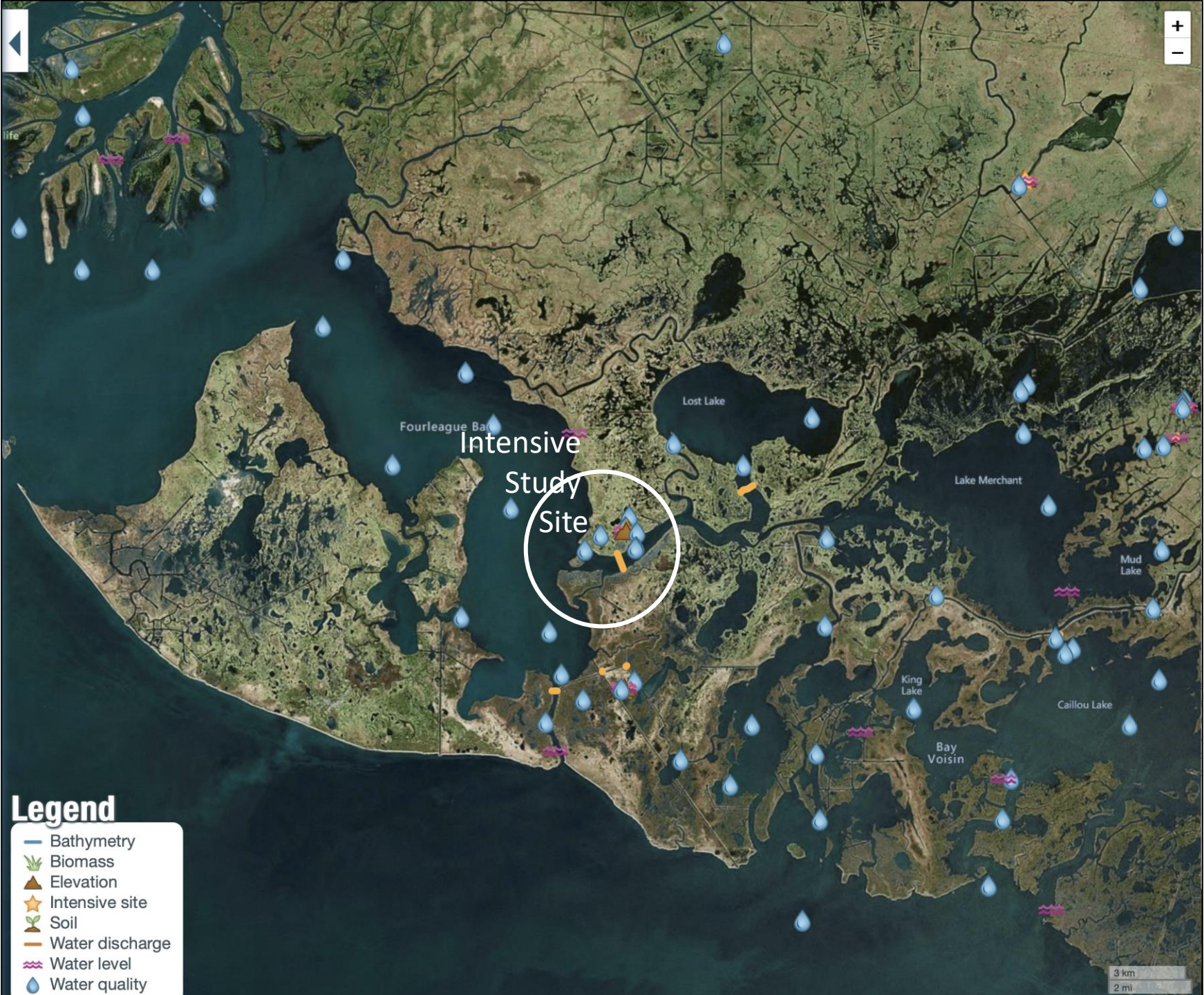


Legend

- Bathymetry
- Biomass
- Elevation
- Intensive site
- Soil
- Water discharge
- Water level
- Water quality

20 km
10 mi

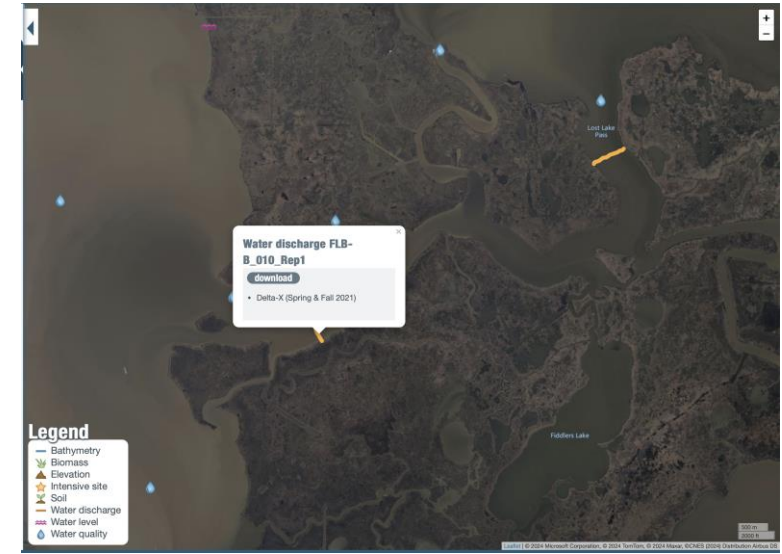
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Legend

- Bathymetry
- Biomass
- Elevation
- Intensive site
- Soil
- Water discharge
- Water level
- Water quality

3 km
2 mi



ORNL DAAC

Delta-X: Acoustic Doppler Current Profiler Channel Surveys, MRD, Louisiana, 2021, V2

Overview

DOI	https://doi.org/10.3334/ORNLDAAC/2081
Version	2
Project	Delta-X
Published	2022-09-23
Updated	2022-09-23
Usage	233 downloads
Citations	1 publication cited this dataset

Download Data 54.8 MB **User Guide** 1 Resource

Description

This dataset provides river discharge measurements collected at selected locations in the Atchafalaya and Terrebonne Basins within the Mississippi River Deltaic (MRD) floodplain in coastal Louisiana, USA. The measurements were made during the Delta-X 2021 field efforts from 2021-03-26 to 2021-04-11 (spring) and 2021-05-16 to 2021-09-20 (fall). Channel surveys were conducted with a Teledyne Resonance acoustic doppler current profiler (ADCP) or a Sonar MB BoostSurveyor ADCP on selected wide channels (>100 m wide) and a few selected narrow channels (approximately 10 m wide) near the Delta-X intensive study sites. River discharge was measured on cross-channel transects. Reported data include bathymetry, discharge (m³/s), and flow velocity.

Science Keywords

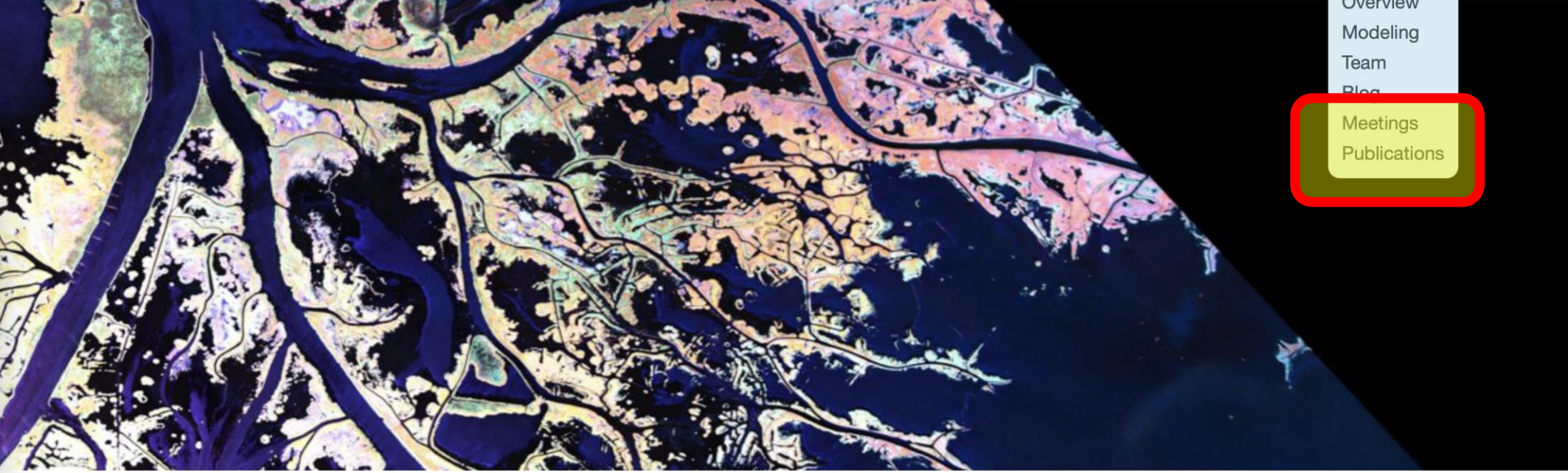
TERRESTRIAL HYDROSPHERE SURFACE WATER SURFACE WATER FEATURES WATER CHANNELS
 TERRESTRIAL HYDROSPHERE SURFACE WATER SURFACE WATER PROCESS/MEASUREMENTS DISCHARGE/FLU
 HYDROSPHERE ECOSYSTEMS AQUATIC ECOSYSTEMS WETLANDS

Data Use and Citation

Chapman, A.L., J.M. Mallory, J. Nghiem, M. Simard, T.M. Flavelly, and M.P. Lewis. 2022. Delta-X: Acoustic Doppler Current Profiler Channel Surveys, MRD, Louisiana, 2021, V2. ORNL DAAC, Oak Ridge, Tennessee, USA. <https://doi.org/10.3334/ORNLDAAC/2081>

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- Overview
- Modeling
- Team
- Blog
- Meetings
- Publications



Publications

Hemati, M., Mahdianpari, M., Shiri, H. and Mohammadimanesh, F., 2024. Integrating SAR and Optical Data for Aboveground Biomass Estimation of Coastal Wetlands Using Machine Learning: Multi-Scale Approach. *Remote Sensing*, 16(5), p.831.

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Cortese, L., Zhang, X., Simard, M. and Fagherazzi, S., 2024. Storm impacts on mineral mass accumulation rates of coastal marshes. *Journal of Geophysical Research: Earth Surface*, 129(3), p.e2023JF007065.

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Hemati, M., Mahdianpari, M., Shiri, H. and Mohammadimanesh, F., 2024. Integrating SAR and Optical Data for Aboveground Biomass Estimation of Coastal Wetlands Using Machine Learning: Multi-Scale Approach. *Remote Sensing*, 16(5), p.831.

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Cortese, L., Zhang, X., Simard, M. and Fagherazzi, S., 2024. Storm impacts on mineral mass accumulation rates of coastal marshes. *Journal of Geophysical Research: Earth Surface*, 129(3), p.e2023JF007065.

[View data](#) | [Paper \(PDF\)](#) | DOI: [10.1029/2023JF007065](#)

Harringmeyer, J.P., Ghosh, N., Weiser, M.W., Thompson, D.R., Simard, M., Lohrenz, S.E. and Fichot, C.G., 2024. A hyperspectral view of the nearshore Mississippi River Delta: Characterizing suspended particles in coastal wetlands using imaging spectroscopy. *Remote Sensing of Environment*, 301, p.113943.

[View data](#) | [Paper \(PDF\)](#) | DOI: [10.1016/j.rse.2023.113943](#)

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[View data](#) | [Paper \(PDF\)](#) | DOI: [10.5194/bg-21-241-2024](#)

Donatelli, C., Passalacqua, P., Jensen, D., Oliver-Cabrera, T., Jones, C.E. and Fagherazzi, S., 2023. Spatial Variability in Salt Marsh Drainage Controlled by Small Scale Topography. *Journal of Geophysical Research: Earth Surface*, 128(11), p.e2023JF007219.

[View data](#) | [Paper \(PDF\)](#) | DOI: [10.1029/2023JF007219](#)

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Wright, K., Hariharan, J., Passalacqua, P., Salter, G. and Lamb, M.P., 2022. From grains to plastics: Modeling nourishment patterns and hydraulic sorting of fluvially transported materials in deltas. *Journal of Geophysical Research: Earth Surface*, 127(11), pp.Art-No.

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Thompson, D.R., Bohn, N., Brodrick, P.G., Carmon, N., Eastwood, M.L., Eckert, R., Fichot, C., Harringmeyer, J.P., Nguyen, H.M., Simard, M. and Thorpe, A.K., Atmospheric Lengthscales for Global VSWIR Imaging Spectroscopy. *Journal of Geophysical Research: Biogeosciences*, p.e2021JG006711.

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[Paper \(PDF\)](#) | DOI: [10.1029/2022JG006794](#)

Salter, G., Passalacqua, P., Wright, K., Feil, S., Jensen, D., Simard, M. and Lamb, M.P., 2022. Spatial patterns of deltaic deposition/erosion revealed by streaklines extracted from remotely-sensed suspended sediment concentration. *Geophysical Research Letters*.

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DOI: [10.1029/2021JC017655](#)

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[View data](#) | DOI: [10.1029/2021JG006712](#)

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[View data & model](#) | DOI: [10.1029/2021JF006294](#)

Cortese, L. and Fagherazzi, S., 2022. Fetch and distance from the bay control accretion and erosion patterns in Terrebonne marshes (Louisiana, USA). *Earth Surface Processes and Landforms*.

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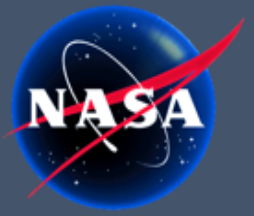
[View data](#) | DOI: [10.1016/j.advwatres.2021.104088](#)

Oliver-Cabrera, T., Jones, C.E., Yunjun, Z. and Simard, M., 2021. InSAR Phase Unwrapping Error Correction for Rapid Repeat Measurements of Water Level Change in Wetlands. *IEEE Transactions on Geoscience and Remote Sensing*.

[View data](#) | DOI: [10.1109/TGRS.2021.3108751](#)



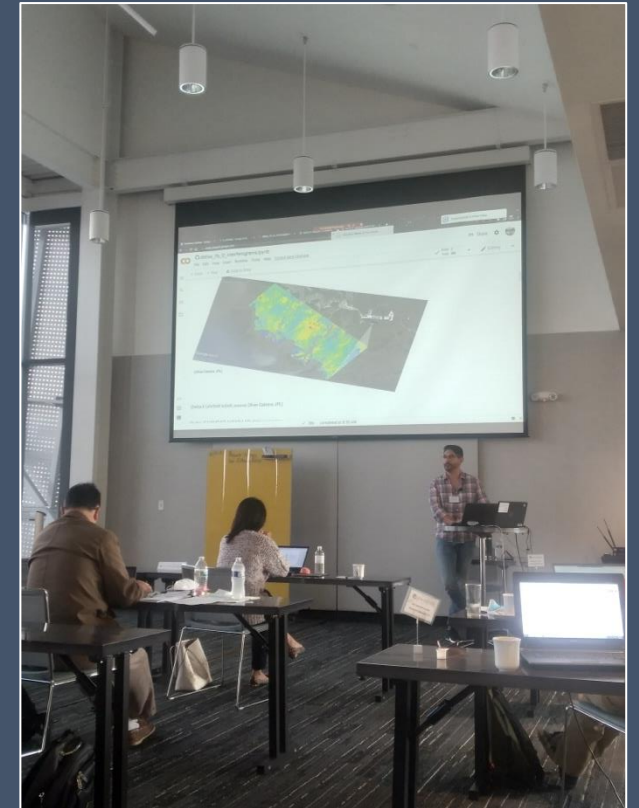
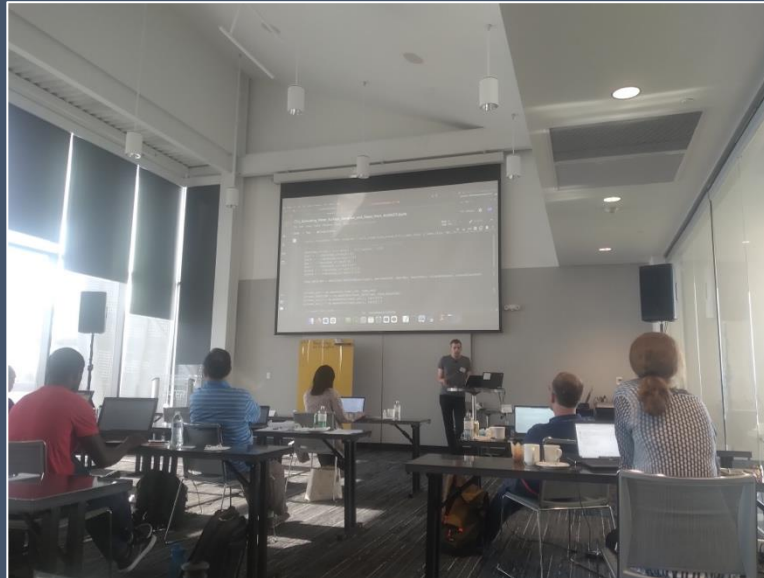
Delta-X Applications Workshops



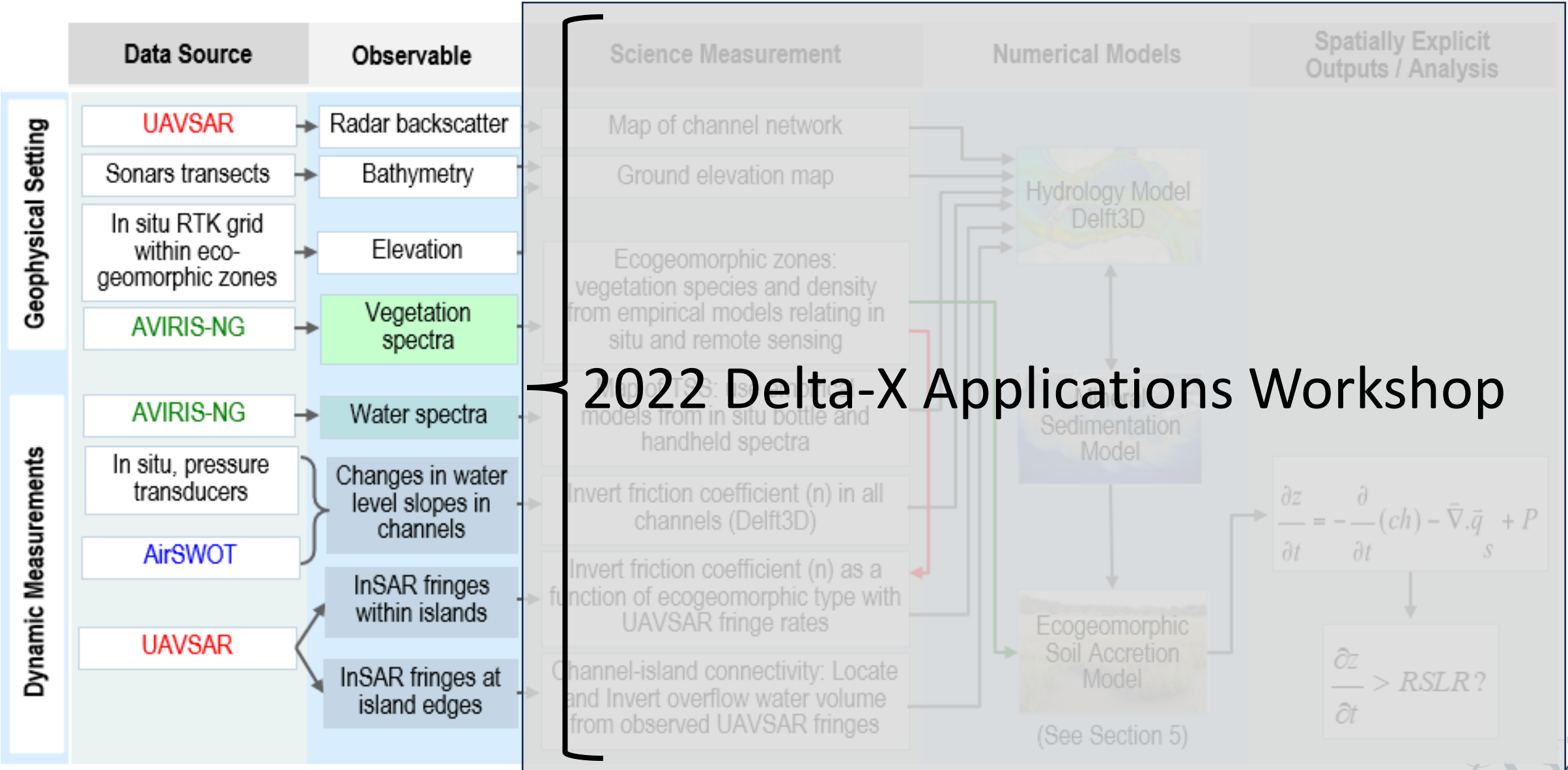
Purpose: Engage the applications community by demonstrating how to access and utilize Delta-X campaign data and hydrodynamic models.

2022 Applications Workshop: Focus on data

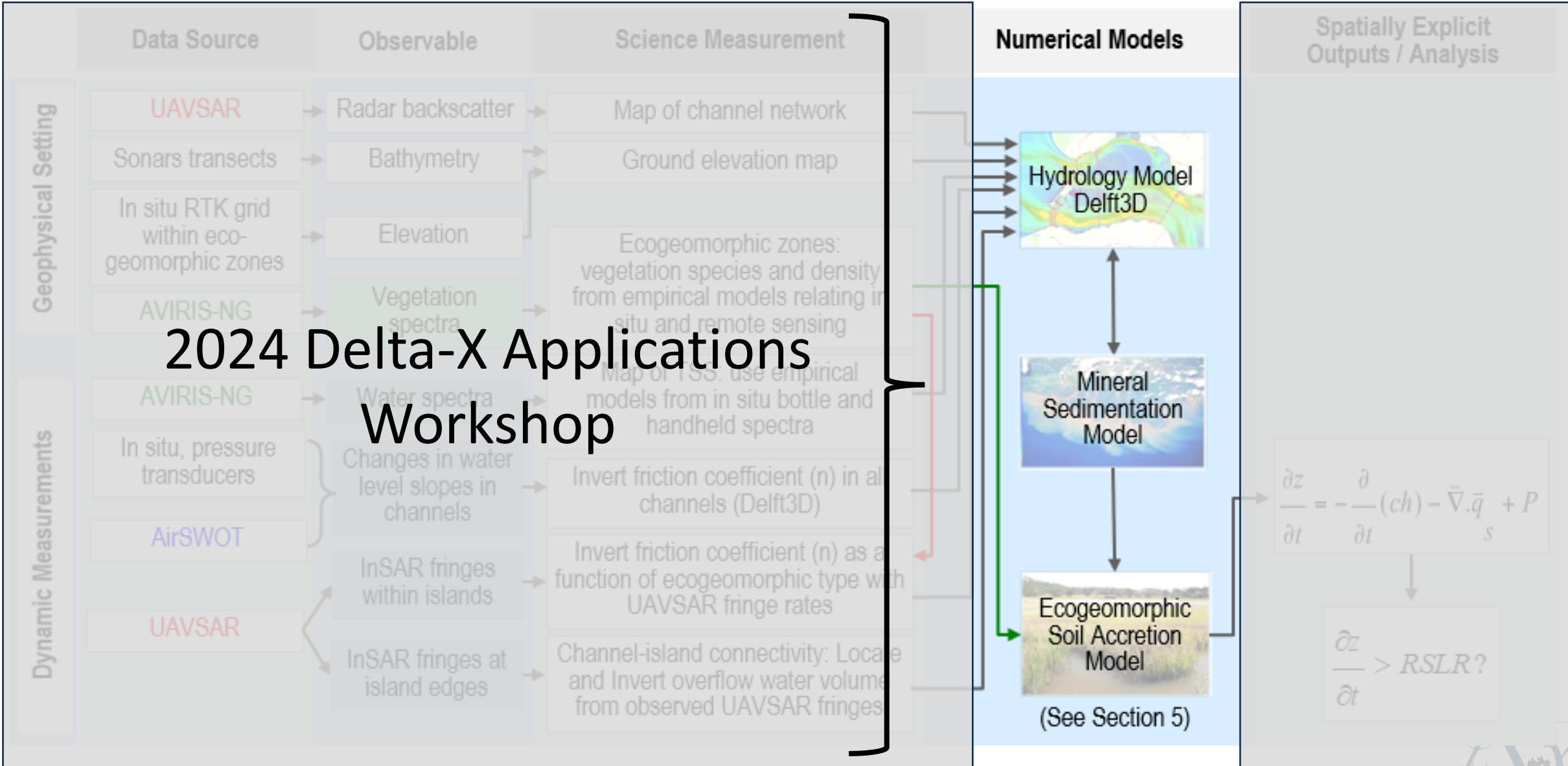
2024 Applications Workshop: Focus on models

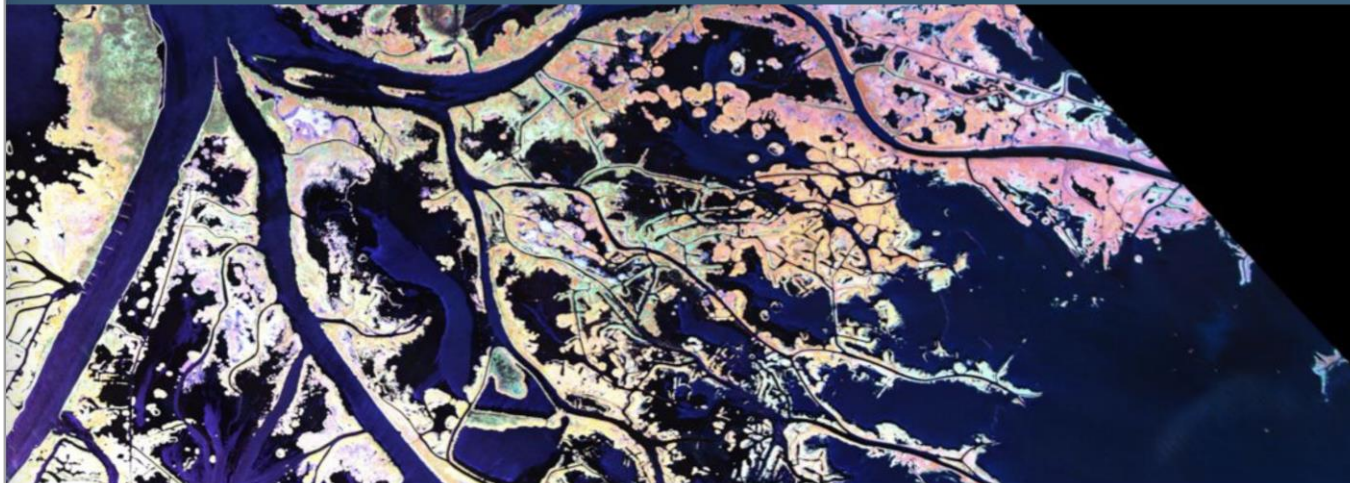


Delta-X: Measurements-to-Models Flowdown



Delta-X: Measurements-to-Models Flowdown





Meetings & Presentations

- [2024 Delta-X Applications Workshop](#)
- [2023 AGU Fall Meeting](#)
- [2023 Delta-X Open Data Workshop](#)
- [2022 EGU Meeting](#)
- [2022 Delta-X Applications Workshop](#)
- [2021 AGU Fall Meeting](#)

2022 Delta-X Applications Workshop

May 4–5 | Baton Rouge, Louisiana

In this two-day workshop, the scientists covered an introduction to Delta-X datasets and steps for analyzing field, airborne, and modeling datasets. Scientists presented material in the form of lecture presentations, hands-on data access demonstrations, and data analysis methods tutorials mostly in the form of Jupyter Notebook content. [View all resources at the ORNL DAAC.](#)

2024 Delta-X Applications Workshop

May 8–9 | Baton Rouge, Louisiana | [Agenda & Instructions](#)

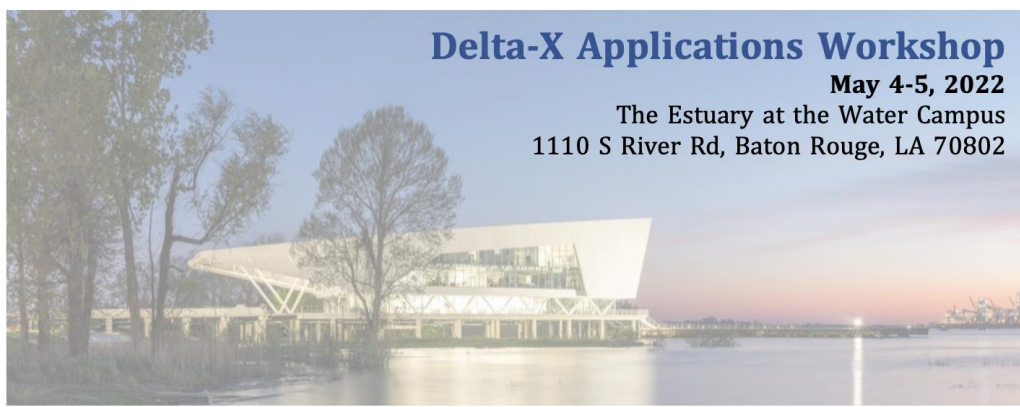
In this two-day workshop, the scientists will present Delta-X models and their inputs/outputs in the form of lecture presentations, hands-on data access demonstrations, and data analysis methods tutorials mostly in the form of Jupyter Notebook content.

To attend virtually, [register here.](#)

Delta-X Applications Workshop

May 4-5, 2022

The Estuary at the Water Campus
1110 S River Rd, Baton Rouge, LA 70802



May 4th Agenda

Time (CT)	Topic	Presenter
8:00 – 8:30	Introduction	Yang Zheng
8:30 – 9:00	Delta-X Overview	Marc Simard
9:00 – 10:00	Data Management Plan and Data Archive	Cathleen Jones
	Field Data Overview and Access	Alex Christensen
	<i>Break 15'</i>	
10:15 – 11:15	Field Data Analysis	Alex Christensen
11:15 – 12:00	AVIRIS-NG Data Overview and Access	Daniel Jensen
	<i>Lunch 90'</i>	
13:30 – 15:45	AVIRIS-NG Application	Daniel Jensen
	<i>Break 15'</i>	
16:00 – 18:00	AirSWOT Data Overview, Access and Application	Michael Denbina

May 5th Agenda

Time (CT)	Topic	Presenter
8:00 – 9:30	AirSWOT Application Continued	Michael Denbina
9:30 – 10:00	UAVSAR Data Overview and Access	Talib Oliver Cabrera
	<i>Break 15'</i>	
10:15 – 12:00	UAVSAR Application	Talib Oliver Cabrera
	<i>Lunch 60'</i>	
13:00 – 15:00	ANUGA Model	Kyle Wright
	<i>Break 15'</i>	
15:15 – 17:15	Delft3D Model	Luca Cortese
17:15 – 17:30	Closeout	

DAAC Home

Delta-X Applications Workshop

Hosted by: Delta-X Science Team

Date: May 4-5, 2022

Contact for the ORNL DAAC: uso@daac.ornl.gov

Keywords: **Tutorial, Airborne, Data Management, Python, SAR**

Overview

On May 4th and 5th, 2022, the Delta-X Science Team developed and conducted a Delta-X Applications Workshop which was held virtually and in person at The Estuary at the Water Campus Baton Rouge, Louisiana. In this two-day workshop, the scientists covered an introduction to Delta-X datasets and steps for analyzing field, airborne, and modeling datasets. Scientists presented material in the form of lecture presentation, hands-on data access demonstrations, and data analysis methods tutorials mostly in the form of Jupyter Notebook content. The Delta-X Science Team has provided videos of presentations, slide content, and Notebook material. That material is organized and available from the ORNL DAAC from the Workshop Content repository link below. The ORNL DAAC archives and distributes datasets from the Delta-X EVS-3 Mission. Read more about the mission at the [Delta-X website](#).

Workshop Content

[Delta-X Applications Workshop \(May 4-5, 2022\)](#)



[Playlist Link](#)

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DAAC Home

Delta-X Applications Workshop

Hosted by: Delta-X Science Team
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Workshop Content

[Delta-X Applications Workshop \(May 4-5, 2022\)](#)



Watch on YouTube

Playlist Link



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Installation_Files	updates and adding 2021 files	2 years ago
slides	updating workshop agenda	2 years ago
tutorials	updating repo links for ANUGA	2 years ago
LICENSE.md	Create LICENSE.md	2 years ago
README.md	adding 2024 application workshop	last month

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Delta-X Applications Workshop (May 4-5, 2022)

The [Delta-X Science Team](#) developed and conducted a Delta-X Applications Workshop on May 4th and 5th, 2022, which was held virtually and in person at The Estuary at the Water Campus Baton Rouge, Louisiana.

In this two-day workshop, the scientists covered an introduction to Delta-X datasets and steps for analyzing field, airborne, and modeling datasets. There are six tutorials in the workshop, one for each data and model component. The datasets needed to run the tutorials are available at the [ORNL DAAC](#).

Lecture content and Notebook material as presented are organized and available here.

- [Workshop Instructions](#)

https://github.com/ornl daac/deltax_workshop_2022

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Delta-X Applications Workshop (May 4-5, 2022)

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- [Workshop Instructions](#)

- > DeltaX_2021
- > Installation_Files
- > slides
- ▼ tutorials
 - > ANUGA_DXWorkshop Python Code, Instructions, Examples
 - > Delft3D
 - > DeltaXWorkshop_Field
 - > DeltaX_Applications_Workshop_AirSWOT
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Delta-X Applications_Workshop 2022 - AirSWOT

This project is funded by JPL under contract with NASA.

The NASA Delta-X project is funded by the Science Mission Directorate's Earth Science Division through the Earth Venture Suborbital-3 Program NNH17ZDA001N-EVS3.

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Module 1: AirSWOT Data Introduction

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Module 2: Estimating Water Surface Elevation and Slope from AirSWOT

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Module 3: Comparing AirSWOT to In Situ Data

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EXAMPLE: AIRSWOT NOTEBOOKS

- READ AND VISUALIZE ALL AIRSWOT PRODUCTS
- CALCULATE WATER SURFACE ELEVATION & SLOPE
- COMPARE TO WATER LEVEL GAUGE DATA

AIRSWOT DATA JNB

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Delta-X 2022 Applications Workshop

AirSWOT Data Introduction

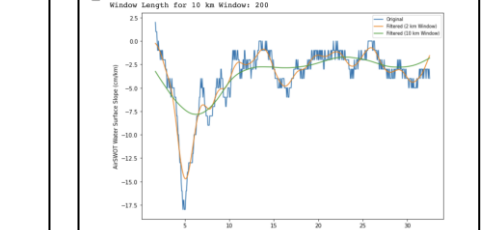
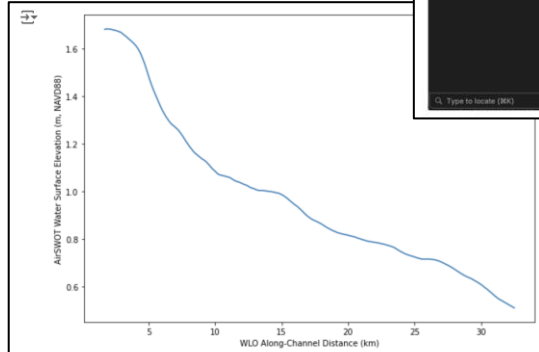
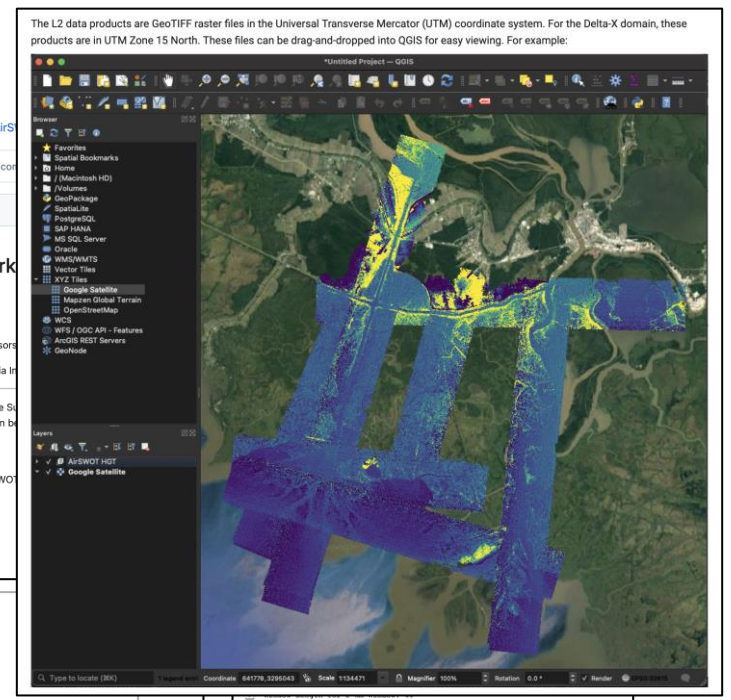
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Author: Michael Denbina, Jet Propulsion Laboratory, California Institute of Technology

In this tutorial, we will give a brief introduction to the Airborne Synthetic Aperture Radar (ASAR) data and how the AirSWOT data can be used to estimate water surface elevation and slope. The AirSWOT tutorial is split into three modules, which cover:

1. AirSWOT Data Introduction (this module)
2. Estimating Water Surface Elevation and Slope from AirSWOT
3. Comparing AirSWOT to In Situ Data

AirSWOT Overview



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Delta-X Applications_Workshop 2022 - AirSWOT

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Module 1: AirSWOT Data Introduction

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Module 2: Estimating Water Surface Elevation and Slope from AirSWOT

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Module 3: Comparing AirSWOT to In Situ Data

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Delta-X 2022 Applications Workshop

Estimating Water Surface Elevation and Slope from AirSWOT

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Author: Michael Denbina, Jet Propulsion Laboratory, California Institute of Technology

The AirSWOT tutorial is split into three modules, which cover:

1. AirSWOT Data Introduction
2. Estimating Water Surface Elevation and Slope from AirSWOT (this module)
3. Comparing AirSWOT to In Situ Data

In this module, we will show how to use a water mask to mask out AirSWOT pixels that are not open water, how to filter outliers, and how to spatially average AirSWOT height data in order to produce accurate estimates of water surface elevation for a waterbody of interest.

Let us say, for example, that we would like to monitor the water surface elevation of the lake at the center of the Google Earth imagery below:

File display

In this module, we covered:

1. How to apply a water mask to AirSWOT data to exclude land pixels from our analysis.
2. How to filter outliers and spatially average AirSWOT data to estimate water surface elevation in a waterbody of interest.
3. How to monitor water level changes over time using repeat passes of AirSWOT over the same lake in the Eastern Terrebonne Basin.
4. How to estimate the water surface slope of the lake by fitting a plane to masked and filtered AirSWOT data in 3-D coordinates.

[AIRSWOT WSE JNB](#)

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DAAC Home

Delta-X Applications Workshop

Hosted by: Delta-X Science Team

Date: May 4-5, 2022

Contact for the ORNL DAAC: uso@daac.ornl.gov

Keywords: Tutorial, Airborne, Data Management, Python, SAR

Overview

On May 4th and 5th, 2022, the Delta-X Science Team developed and conducted a Delta-X Applications Workshop which was held virtually and in person at The Estuary at the Water Campus Baton Rouge, Louisiana. In this two-day workshop, the scientists covered an introduction to Delta-X datasets and steps for analyzing field, airborne, and modeling datasets. Scientists presented material in the form of lecture presentation, hands-on data access demonstrations, and data analysis methods tutorials mostly in the form of Jupyter Notebook content. The Delta-X Science Team has provided videos of presentations, slide content, and Notebook material. That material is organized and available from the ORNL DAAC from the Workshop Content repository link below. The ORNL DAAC archives and distributes datasets from the Delta-X EVS-3 Mission. Read more about the mission at the [Delta-X website](#).

Workshop Content

[Delta-X Applications Workshop \(May 4-5, 2022\)](#)



[Playlist Link](#)

Video Presentations for each dataset + ANUGA model

 A screenshot of a YouTube playlist page for "Delta-X Applications Workshop 2022". The main video player shows a satellite view of a river delta with the "Delta-X" logo. Below the player, the text reads: "NASA Earthdata 9 videos 690 views Last updated on Aug 30, 2022". There are "Play all" and "Shuffle" buttons. A description follows: "NASA's Delta-X Science Team developed and conducted a hybrid Delta-X Applications Workshop held May 4-5, 2022, at The Estuary at the Water Campus located in Baton Rouge, Louisiana. The scientists introduced Delta-X datasets in this two-day workshop and how to analyze field, airborne, and modeling datasets. Within this workshop playlist, you will find six tutorials— one for each data and model component. The datasets needed to run the tutorials are available at NASA's Oak Ridge National Laboratory Distributed Active Archive Center (ORNL DAAC) at: https://daac.ornl.gov/cgi-bin/dataset_lister.pl?p=41."

- 1 **Delta-X Applications Workshop 2022: Introduction**
NASA Earthdata • 522 views • 1 year ago
- 2 **Delta-X Field Data: Overview, Access, and Analysis**
NASA Earthdata • 196 views • 1 year ago
- 3 **Delta-X Airborne Visible/Infrared Imaging Spectrometer - Next Generation (AVIRIS-NG), Part I**
NASA Earthdata • 445 views • 1 year ago
- 4 **Delta-X Airborne Visible/Infrared Imaging Spectrometer - Next Generation (AVIRIS-NG), Part II**
NASA Earthdata • 289 views • 1 year ago
- 5 **Delta-X Airborne Surface Water and Ocean Topography (AirSWOT): Overview, Access, and Application**
NASA Earthdata • 122 views • 1 year ago
- 6 **Delta-X Uninhabited Aerial Vehicle Synthetic Aperture Radar (UAVSAR), Part I**
NASA Earthdata • 337 views • 1 year ago
- 7 **Delta-X Uninhabited Aerial Vehicle Synthetic Aperture Radar (UAVSAR), Part II**
NASA Earthdata • 173 views • 1 year ago
- 8 **Delta-X ANUGA Model**
NASA Earthdata • 523 views • 1 year ago
- 9 **Delta-X Delft3D Model**
NASA Earthdata • 2.4K views • 1 year ago

Delta-X Applications Workshop

May 8-9, 2024

The Estuary at the Water Campus
1110 S River Rd, Baton Rouge, LA 70802

May 8th Agenda

Time (CT)	Topic	Presenter
8:00 – 8:30	Meet and greet	
8:30 – 9:30	Introduction	Marc Simard Cathleen Jones Yang Zheng
9:30 – 9:45	Hydrodynamic modeling with ANUGA: introduction	Antoine Solyo
	<i>Break 15'</i>	
10:00 – 12:00	Hydrodynamic modeling with ANUGA: model run	Antoine Solyo
	<i>Lunch 90'</i>	
13:30 – 14:30	Hydrodynamic modeling with ANUGA: simulations	Antoine Solyo
14:30 – 15:15	Demonstration of Dorado sediment transport	Muriel Brückner Antoine Solyo
	<i>Break 15'</i>	
15:30 – 17:00	Demonstration of Dorado sediment transport	Brückner, Solyo
17:00 – 17:30	Hands-on exercises and discussions	Brückner, Solyo

May 9th Agenda

Time (CT)	Topic	Presenter
8:00 – 10:00	Hydrodynamic Modeling of Deltas using Delft3d	Ali Payandeh
	<i>Break 15'</i>	
10:15 – 12:00	The fate of Deltas - Delft3d Morphodynamic modeling	Ali Payandeh
	<i>Lunch 90'</i>	
13:30 – 15:00	Sediment transport model	Dongchen Wang
	<i>Break 15'</i>	
15:15 – 17:15	NUMAR model, data, and how to use them	Robert Twilley Pradipta Biswas Ivan Vargas-Lopez Alex Christensen Muriel Brückner
17:15 – 18:30	River Model Tour	Ali Payandeh
18:30 – 18:45	Close-out	

https://github.com/ornldaac/deltax_workshop_2024

The screenshot shows the GitHub interface for the repository 'ornldaac/deltax_workshop_2024'. At the top, there are navigation tabs for Code, Issues, Pull requests, Discussions, Actions, Security, and Insights. Below these, there are repository statistics: 'main' branch, 6 branches, and 0 tags. A search bar and a 'Code' button are also visible. The main content area displays a list of files and folders with their commit history:

- `installation_files`: Delete installation_files/.DS_Store (last month)
- `slides`: Merge pull request #28 from achri19/main (last week)
- `tutorials`: Merge branch 'main' into main (last month)
- `.gitignore`: Final version of notebooks used for the workshop (last month)
- `LICENSE.md`: add license (4 months ago)
- `README.md`: Update README.md (last week)

Below the file list, there are sections for 'README' and 'License'. The README section contains the following text:

Delta-X Applications Workshop

May 8-9, 2024

Workshop Instructions




RECORDINGS OF THE TUTORIALS WILL BE
POSTED ON ORNL DAAC SOON




ORNL DAAC – Hosts Delta-X Models




Delta-X Model | Search




Data Website




Found 27 results Earthdata Search




[Delta-X: Delft3D Sediment Model, Site 396, Terrebonne Basin, MRD, Louisiana, USA](#)
<https://doi.org/10.3334/ORNLDAAC/2314>
 This dataset contains the Delft3D model of the intensive site 396 in the Terrebonne Basin along the Mississippi River Delta (MRD) in coastal Louisiana...  




[Delta-X: Delft3D Sediment Model, Site 399, Terrebonne Basin, MRD, Louisiana, USA](#)
<https://doi.org/10.3334/ORNLDAAC/2313>
 This dataset contains the Delft3D model of the intensive site 399 in the Terrebonne Basin along the Mississippi River Delta (MRD) in coastal Louisiana...  




[Delta-X: Delft3D Sediment Model, Site 322, Terrebonne Basin, MRD, Louisiana, USA](#)
<https://doi.org/10.3334/ORNLDAAC/2312>
 This dataset contains the Delft3D model of the intensive site 322 in the Terrebonne Basin along the Mississippi River Delta (MRD) in coastal Louisiana...  




[Delta-X: Delft3D Sediment Model, Site 421, Terrebonne Basin, MRD, Louisiana, USA](#)
<https://doi.org/10.3334/ORNLDAAC/2304>
 This dataset contains the Delft3D model of the intensive site 421 in the Terrebonne Basin along the Mississippi River Delta (MRD) in coastal Louisiana...  

[Delta-X: Delft3D Sediment Model, Site 294, Terrebonne Basin, MRD, Louisiana, USA](#)
<https://doi.org/10.3334/ORNLDAAC/2303>
 This dataset contains the Delft3D model of the intensive site 294 in the Terrebonne Basin along the Mississippi River Delta (MRD) in coastal Louisiana...  

[Delta-X: Delft3D Broad-Scale Sediment Model, Atchafalaya Basin, MRD, Louisiana, USA](#)
<https://doi.org/10.3334/ORNLDAAC/2302>
 This dataset contains the Delft3D model of the Atchafalaya Basin along the Mississippi River Delta (MRD) in coastal Louisiana. Simulations cover the...  

[Delta-X: Delft3D Broad-Scale Sediment Model, Terrebonne Basin, MRD, Louisiana, USA](#)
<https://doi.org/10.3334/ORNLDAAC/2301>
 This dataset contains the Delft3D model of the Terrebonne Basin along the Mississippi River Delta (MRD) in coastal Louisiana. Simulations cover the Delta-X...  

[Delta-X: Digital Elevation Model, MRD, LA, USA, 2021](#)
<https://doi.org/10.3334/ORNLDAAC/2181>
 This dataset provides an updated digital elevation model (DEM) for the Atchafalaya and Terrebonne basins in coastal Louisiana, USA. The DEM is updated from...  

[Delta-X: Island and Secondary Channel Model, MRD, LA, USA, 2022](#)
<https://doi.org/10.3334/ORNLDAAC/2106>
 This dataset includes model code and output for a model that simulates changes in islands and small water channels of river delta systems in response to...  



DELTA-X at ORNL DAAC:



https://daac.ornl.gov/cgi-bin/dataset_lister.pl?p=41

DELTA-X WEBSITE:

