

IOOS Code Sprint Lightning Talks #2

October 9, 2019



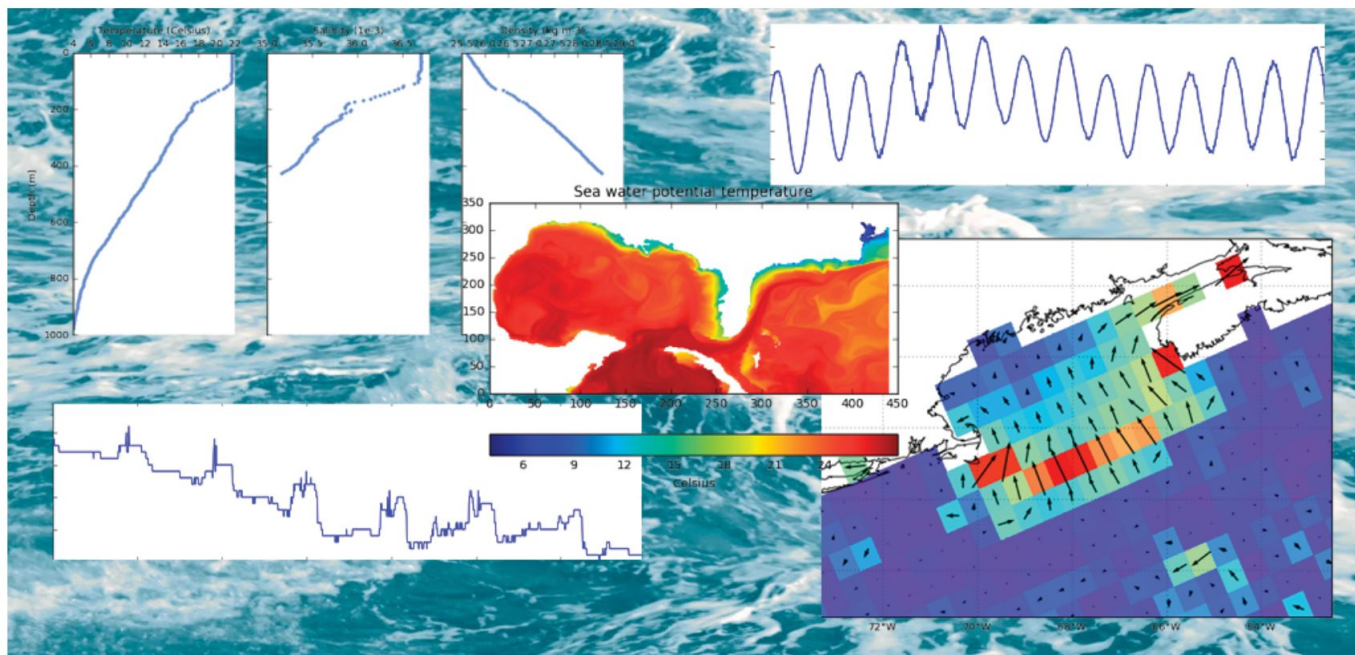
Talk #1

IOOS Data Demo Center: more than just examples

The IOOS Data Demo Center

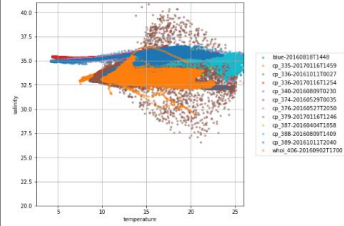
OTHER RESOURCES

1. Installing the IOOS conda environment
2. Opening netCDF files - hints from AODN
3. Unidata Jupyter notebook gallery
4. Extracting and enriching OBIS data with R
5. USGS-R examples

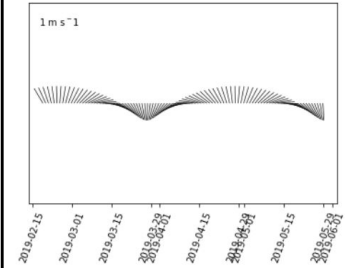


The IOOS Notebook Gallery is a collection of tutorials and examples of how to access and utilize the many IOOS technologies and data sources available. This site is geared towards scientists and environmental managers interested in “diving deep” into the numbers and creating original plots and data analysis. Most notebook examples are written in Python, however, we also have a growing number of notebooks written in Matlab, and R.

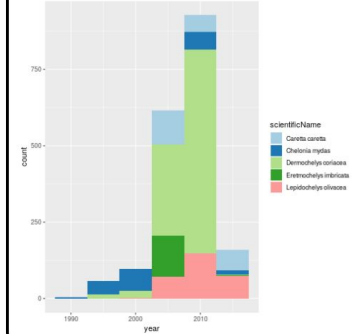
erddapy: a python client/URL builder for ERDDAP



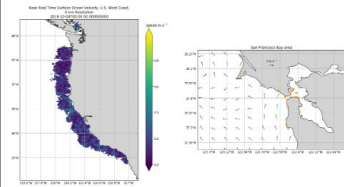
Creating a CF-1.6 timeSeries using pcocean



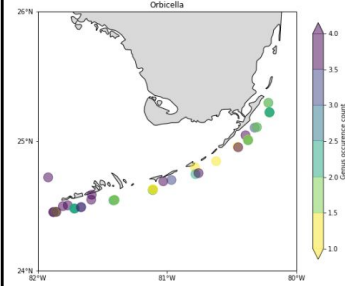
Using r-obistools and r-obis to explore the OBIS database



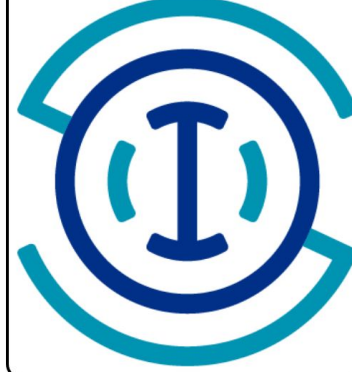
Fetching data from a CSW catalog with Python tools



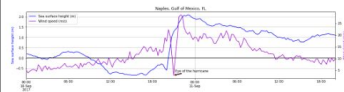
Calling R libraries from Python



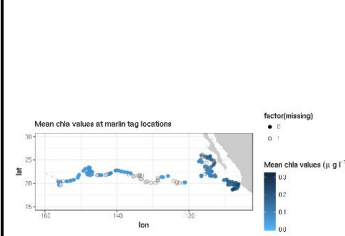
Using BagIt to tag oceanographic data



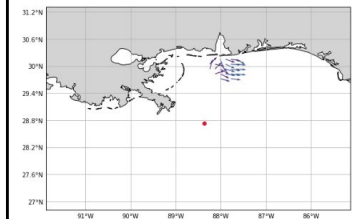
Exploring the NHC Advisories and Sea Surface Height during Hurricane Irma



Using the `xtractomatic` R package to track Pacific Blue Marlin



Near real-time HF-Radar currents in the proximity of the Deepwater Horizon site



Examples are great for community building!

And we also get from the Data Demo Center:

- bug reports from people who are not GH savvy;
- data Integration tests;
 - bad metadata;
 - bitrot: disappearing data, URL change, etc.
- environment installation tests on macOS, Linux and Windows.
- future proofing / early testing of the libraries as they evolve.

Please send examples, data/library requests of what you want to see, and advertise the site on your local community!

https://ioos.github.io/notebooks_demos/code_gallery

Talk #2:

BCO-DMO ERDDAP Deployment

<https://www.bco-dmo.org/dataset/549122>

Talk #3:

[hvplot live demo](#) (Rich Signell)

HoloViz.org



High-level tools to simplify visualization in Python.

Welcome to HoloViz! HoloViz is a coordinated effort to make browser-based data visualization in Python easier to use, easier to learn, and more powerful.

HoloViz provides:

- High-level tools that make it easier to apply Python plotting libraries to your data.
- A comprehensive [tutorial](#) showing how to use the available tools together to do a wide range of different tasks.
- A [Conda](#) metapackage "holoviz" that makes it simple to install matching versions of libraries that work well together.
- Sample datasets to work with.

HoloViz-maintained libraries



OBIS data access demo

- R within py
- py within R

Top 3 "coordinateUncertaintyInMeters" for Balaenoptera musculus



PWA PoC?

Progressive Web App Proof of Concept?

Why bother?

Cache web page on device
Provide native app-like experience

Some links:

<https://developers.google.com/web/progressive-web-apps>

<https://developers.google.com/web/progressive-web-apps/checklist>

<https://blog.bitsrc.io/how-to-build-a-react-progressive-web-application-pwa-b5b897df2f0a>

What you seem to need to do:

Go HTTPS
Register your service worker

What happens?

<https://ioos-pwa.limno.tech/> - open it, wait 5-10 minutes, open it again, add it to home screen

What next?

Look at feasibility of PWA'ing the ERDDAP viewer we're working on

Animations of Moving Platforms

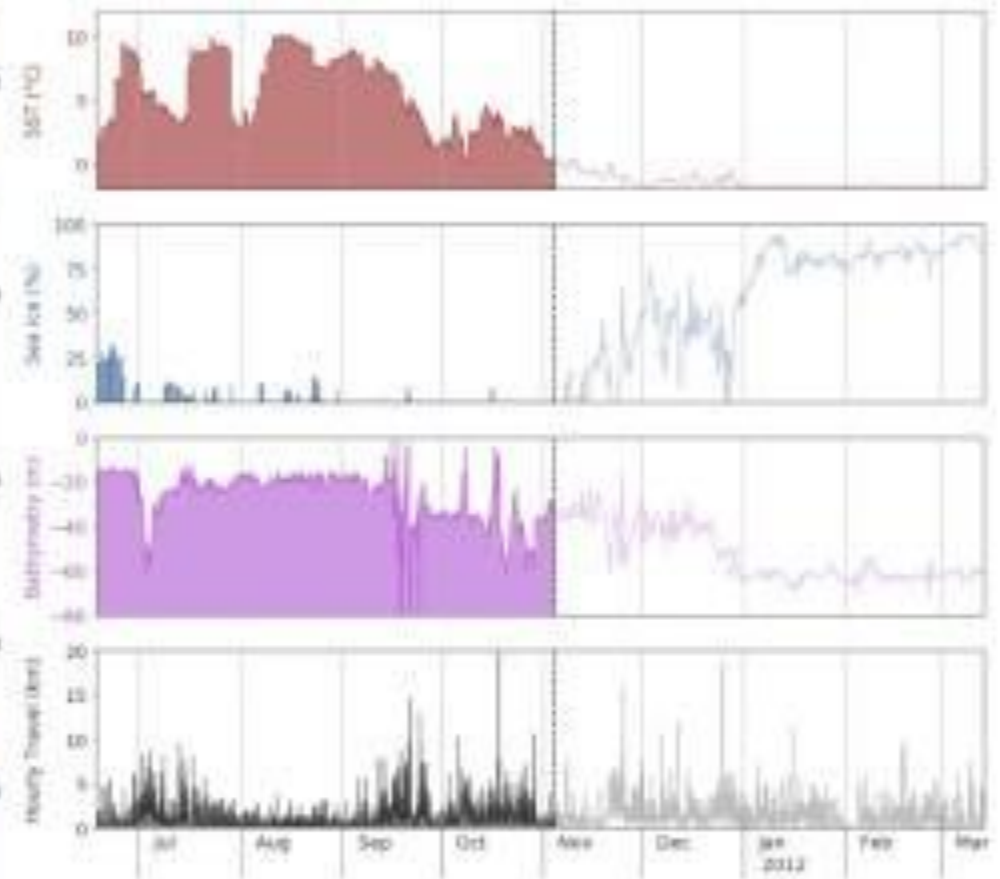
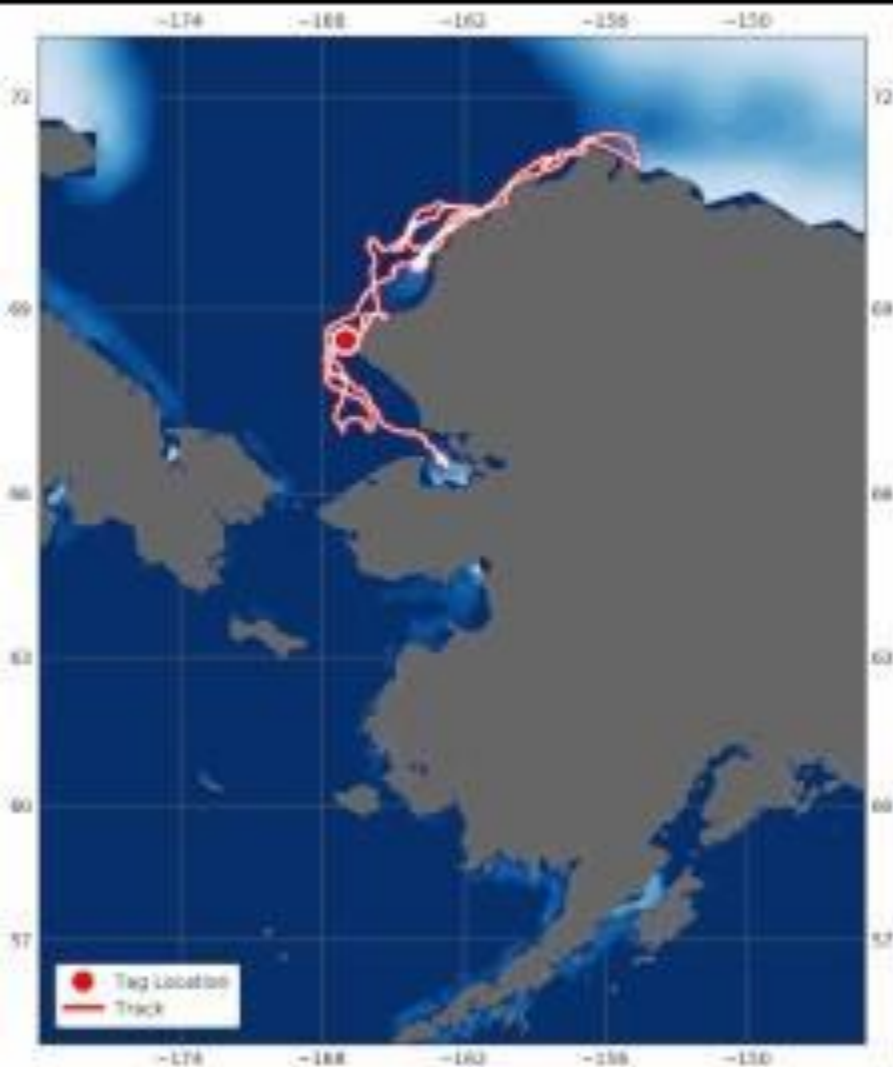
via Jupyter Notebooks

```
import glob
import os
import sys
import pandas as pd
import geopandas as gpd
import numpy as np
import matplotlib as mpl
import matplotlib.pyplot as plt
import shapely
from shapely import wkt
import netCDF4
import xarray as xr
from tqdm import trange
import matplotlib.dates as mdates
import matplotlib.transforms
import cartopy
from cartopy.io import shapereader
from matplotlib import animation

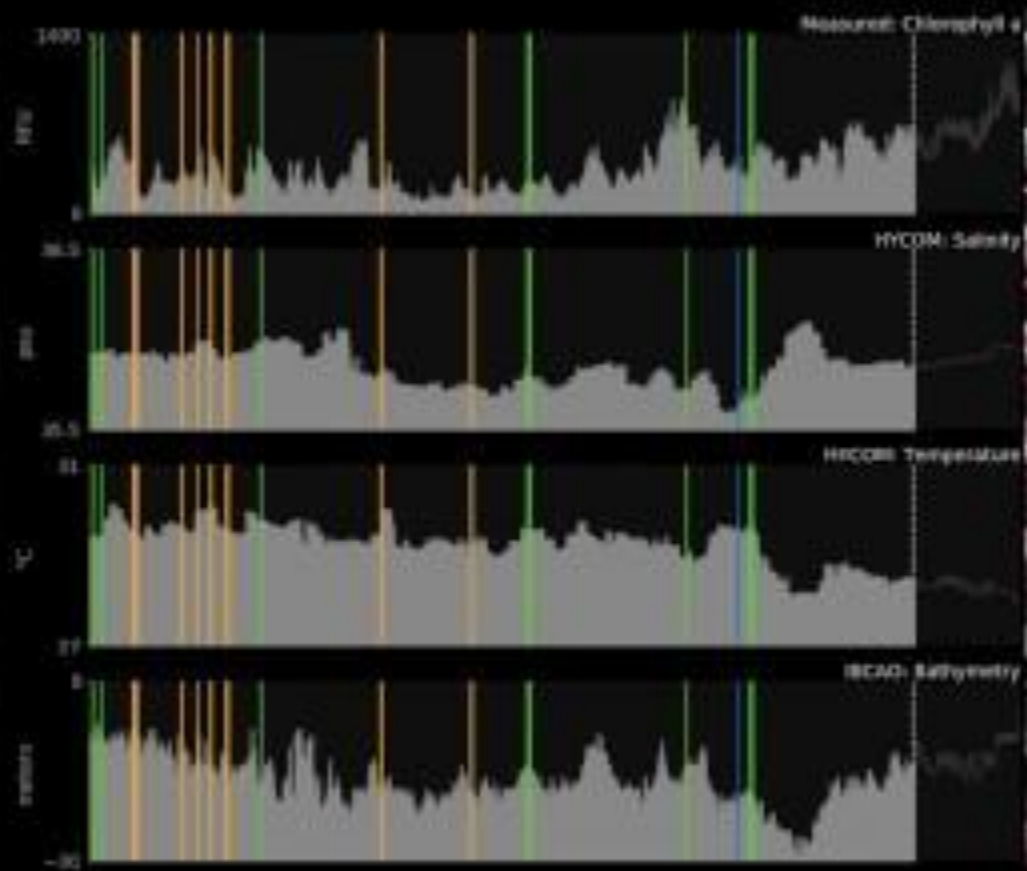
import datetime
import time
from dateutil.relativedelta import relativedelta

import io
from PIL import Image

from pandas.plotting import register_matplotlib_converters
register_matplotlib_converters()
```

Adult Bearded Seal #38553
November 04, 2011 at 12:00



Wave Glider Deployment
BOEM_MMP_2018_003
October 07, 2018 at 03:40