

Readme

Prepared by Chase Pixa on April 21, 2023

In this folder you will find all of the raw data collected from 9 days of in situ tracking in Puerto Rico (July 2022) and open source or purchased data used to validate the tracks.

Coverage: Area between Puerto Rico and Dominican Republic: July 21-30, 2022

The folder is structured as follows:

- GPS
 - o SPOT (lat/lon)
 - o Argos (lat/lon)
- Current
 - o PRVI model by day (uv)
 - o Grid structure
- Wind
 - o Model by day (uv, lat/lon)
- Satellite
 - o Images for 21, 26, 29 July 2022 at locations of drifters

Data Information

GPS data:

DrifterA_Spot_721_730:

- data pulled from SPOT website (<https://maps.findmespot.com/Track#live/assets>)
- edited in excel separate lat and lon, converted to decimal
- data used: lat, lon, time (UTC)

DrifterB_Argos_721_730:

- data pulled from ARGOS website (<https://argos-system.cls.fr/argos-cwi2/main.html>)
- data used: lat, lon, time (UTC)

Current data:

- data pulled from: [http://caricoos-web.s3-website-us-east-1.amazonaws.com/ocean/currents/forecast/FVCOM/NETCDF FOR SARGASSUM TRACKING/](http://caricoos-web.s3-website-us-east-1.amazonaws.com/ocean/currents/forecast/FVCOM/NETCDF_FOR_SARGASSUM_TRACKING/)

naming convention follows PRVI_'date'_surface_uv.nc:

- data used: u & v (east and north surface current velocity respectively) at each gridded location as given by Mobj.mat
- each file is 1-day, gridded uv every 15 minutes
- use built-in MATLAB function 'ncdisp' to investigate file

Mobj.mat:

- defines the prismatic grid used in the FVCOM model (latc & lonc), area surrounding Puerto Rico

Wind data:

- data pulled from: <https://data.remss.com/ccmp/v02.1.NRT/Y2022/M07/>

naming convention follows CCMP_ 'date' _RSS.nc:

- gridded lat/lon for entire earth, only used data surrounding Puerto Rico and Dominican Republic
- Data used: lat, lon, u & v (east and north 10m surface wind respectively), number of observations
- each file is 1-day, gridded uv every 6 hours
- use built-in MATLAB function 'ncdisp' to investigate file

Satellite data:

- images/data purchased from: <https://eos.com/landviewer/>

naming convention follows S2A/B_tile_ 'date' _ 'info' .tiff:

- Sentinel-2A/B images were accessed through EOSDA Landviewer platform
 - o an area of interest was identified
 - o filtered as shown in main text and supplementary materials
 - o downloaded as a tiff (maintaining geospatial details)
- The boundaries and resolution are contained within each .tiff file (i.e. use 'gettiffinfo' in MATLAB)
 - o Pixelscale is meter/pixel

Parameter	Description	Units
GPS	Lat/Lon	Decimal degrees
Wind	10 m surface	m/s
Current	Surface	m/s

Instruments:

Dataset-specific Instrument Name	SPOT Trace
Generic Instrument Name	GPS
Generic Instrument Description	Off the shelf GPS

Instruments:

Dataset-specific Instrument Name	Argos MAR-GE/T
Generic Instrument Name	GPS
Generic Instrument Description	Self-contained, positively buoyant GPS

Deployments:

Start Date	7/21/2022
End Date	7/30/2022