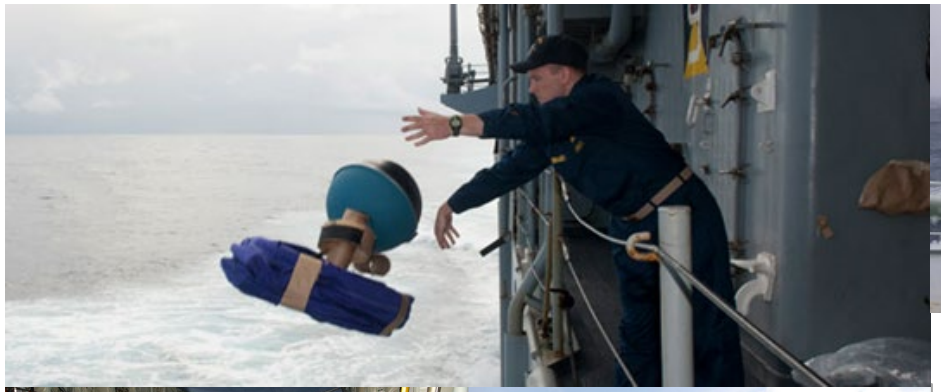
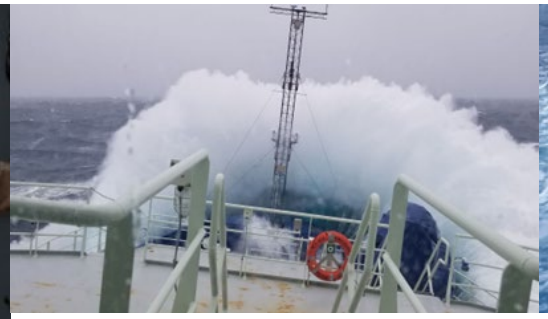
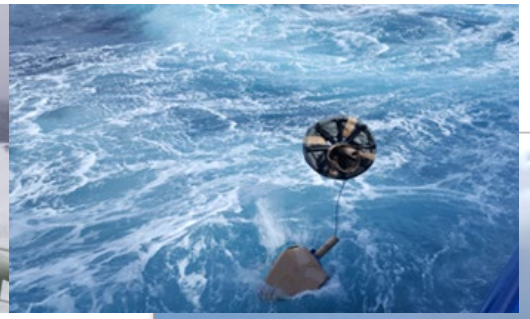
Sharing Drifting Buoy Data on GTS and WIS2.0




DBCP Capacity Building Workshop

Jakarta, Indonesia
6 August, 2024

Presented By
Mr. Lance Braasch
Research and Development Engineer IV
Lagrangian Drifter Laboratory
Scripps Institution of Oceanography

DBCP Vice-Chair, DBCP TT-Data Management Co-Chair

Scripps Institution of Oceanography's
LAGRANGIAN DRIFTER LABORATORY

The Lagrangian Drifter Lab

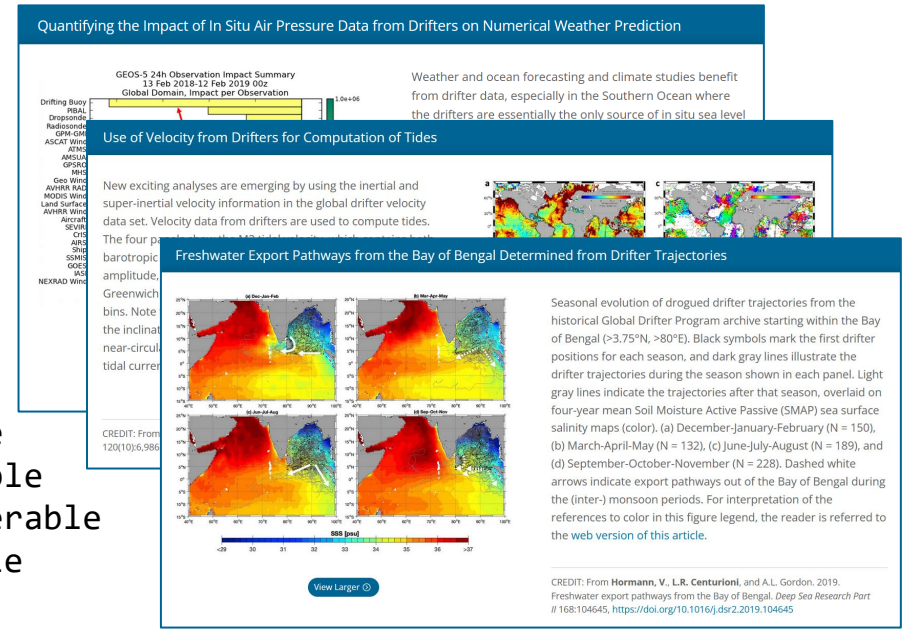
Director: Dr. Luca Centurioni, PI of the Global Drifter Program

The Lagrangian Drifter Laboratory (LDL) is a team of Scientists, Engineers, Technicians, Coordinators, students and external collaborators in support of the end-to-end use of Lagrangian Drifter Technology and for promoting the advancement of air-sea interaction science (1,200+ paper published resulting from the FAIR-O data approach)

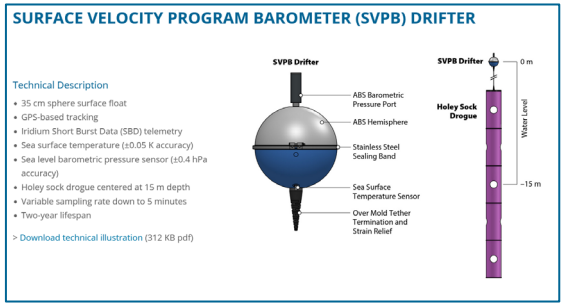
ACTIVITIES

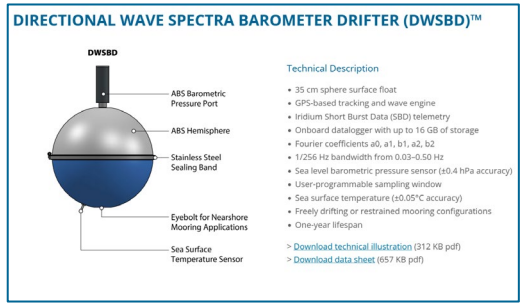
Generation of scientific publications and products; Scientific advancements and applied science; Education and Outreach

- Development of new and existing drifter technologies
- Organization of scientific field campaigns
- Data management and analysis
- Peer-reviewed publications with associated DOI and FAIR-O dataset



Findable
Accessible
Interoperable
Re-usable
Open





https://ldl.ucsd.edu

Scripps Institution of Oceanography's
LAGRANGIAN DRIFTER LABORATORY

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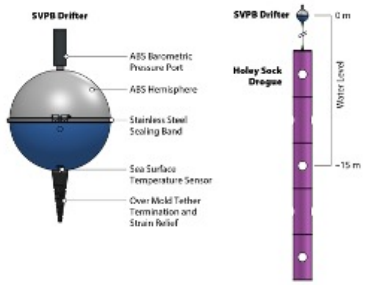
LAGRANGIAN DRIFTER LABORATORY

What Kind of Data and Metadata?

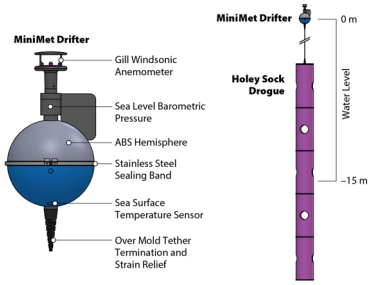
- Off-shore wave conditions
- Ocean surface velocity
- Mixed-layer structure
- Sea level pressure
- Surface winds
- Sea surface temperature

+ MORE



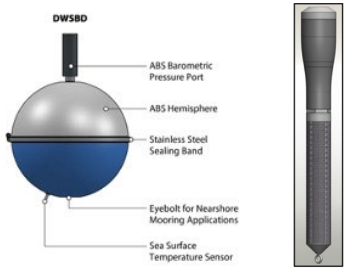
SVP and SVP-B

Atmospheric data and currents



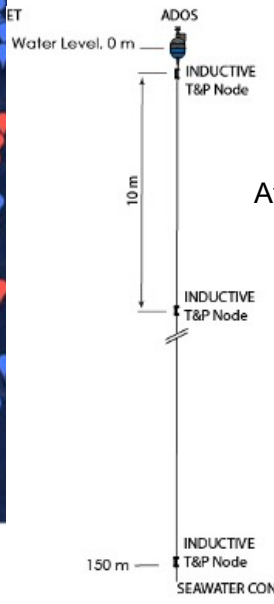
MiniMet

Atmospheric data and currents



DWSD-B and A-DWS

Atmospheric data and waves



ADOS

Atmospheric and Upper Ocean Heat Content

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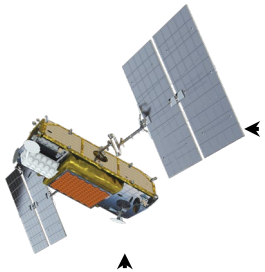
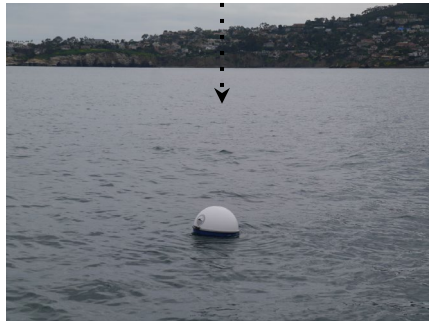
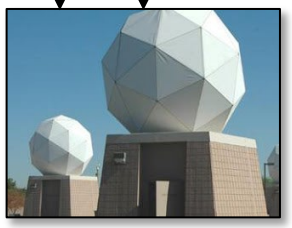
Lagrangian Drifter Lab is a Real-Time Data Assembly Center (RT-DAC) in MCDS



~ 24 SBD/day

~ 30,000 SBD/day





Lagrangian Drifter Lab

Iridium Processing Server

Database Server

WIS2BOX

Data Processing Server

GTS Server

Metadata Server

Web Server

Graphical Data Viewer

ERDDAP Endpoint

URL based Data requests

WIS2.0 Global Broker

National Weather Service

OSCAR/Surface

Project Scientists

Delayed Mode-DAC

Drifter Data Acquisition

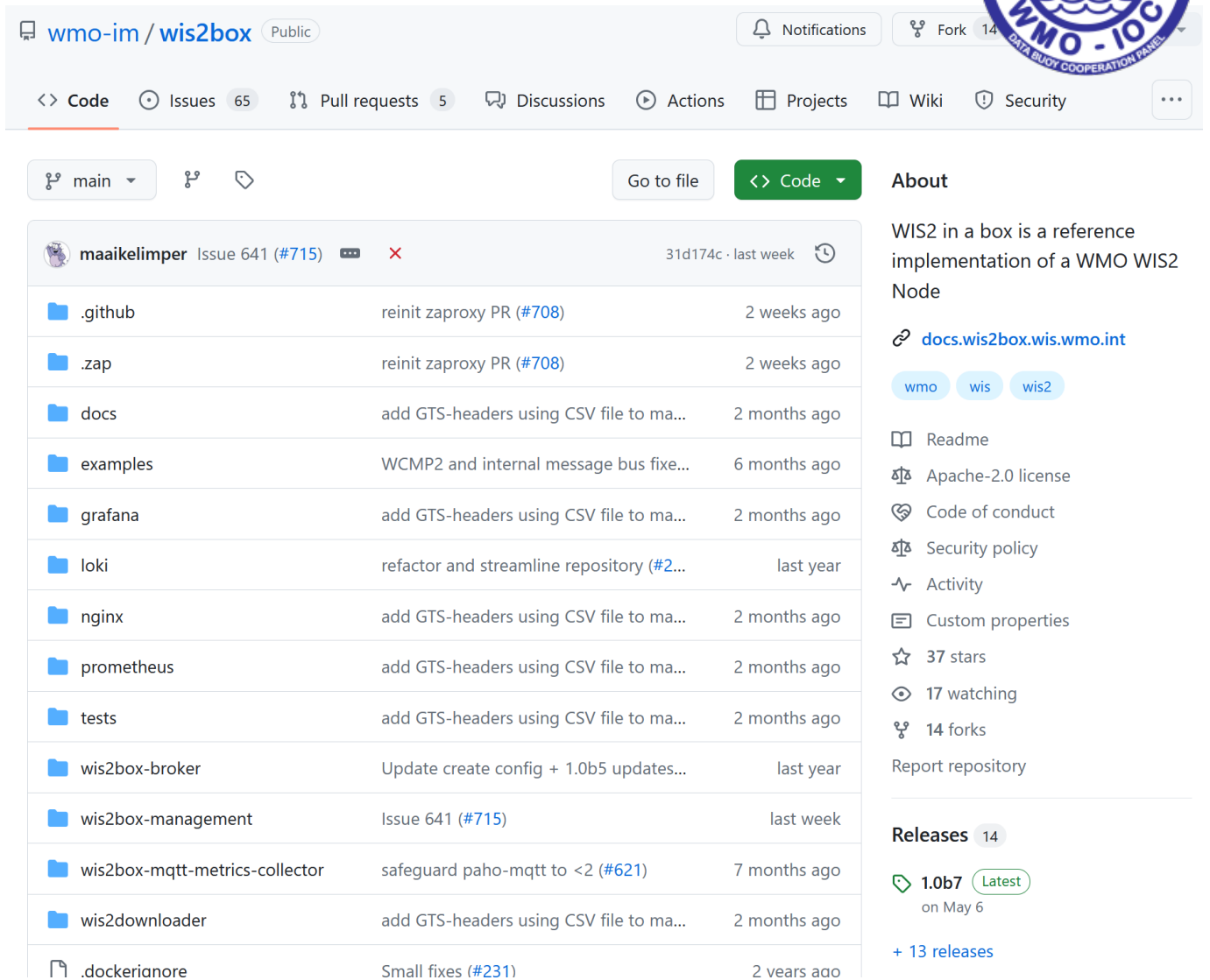
Iridium Ground Station

Server-Side Data Collection and Distribution

Data End Users

WIS2BOX on Github

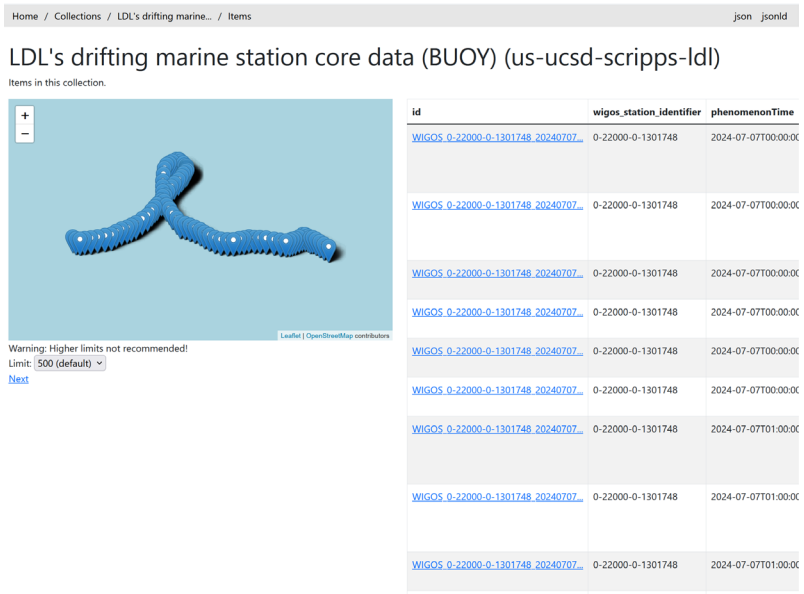
- All WIS2BOX code is open source and freely available from the WMO-Information Management's Github repository
- Discussion Forum for end-user questions and engagement with WIS2 experts
- Bug-fixes and patches implemented by WIS2BOX team

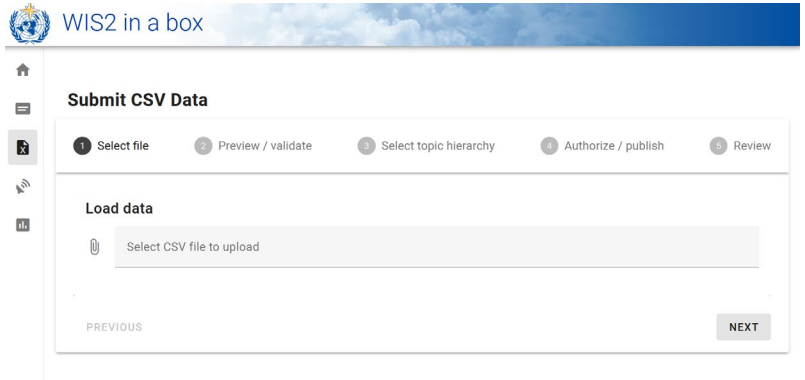


https://github.com/wmo-im/wis2box

WIS2BOX: Human and Machine Interfaces

- WIS2BOX is fully customizable by the end user. **Use as much of WIS2BOX as you require.**
- WIS2BOX may be operated by either human graphical user interfaces (GUI) or machine to machine (M2M) process
- All tools that are required for WIS2 network are included with WIS2BOX - **only requirement is a template file** to format your input data into compliant formatting known as BUFR
- Users may manually upload CSV files to the GUI or import data using command line interface automation for **full M2M implementation**





SETTINGS

HOME DOCUMENTATION

Welcome to WIS 2.0 in a box!

LDL's drifting marine station core data (BUOY) (us-ucsd-scripps-ldl)

Topic: origin/a/wis2/us-ucsd-scripps-ldl/data/core/weather/experimental/surface-based-observations/buoy

EXPLORE OBSERVATIONS DISCOVERY METADATA

LDL's drifting marine station recommended data (BUOY) (us-ucsd-scripps-ldl)

Topic: origin/a/wis2/us-ucsd-scripps-ldl/data/recommended/weather/experimental/surface-based-observations/buoy

EXPLORE OBSERVATIONS DISCOVERY METADATA

https://wis2.ldl.ucsd.edu

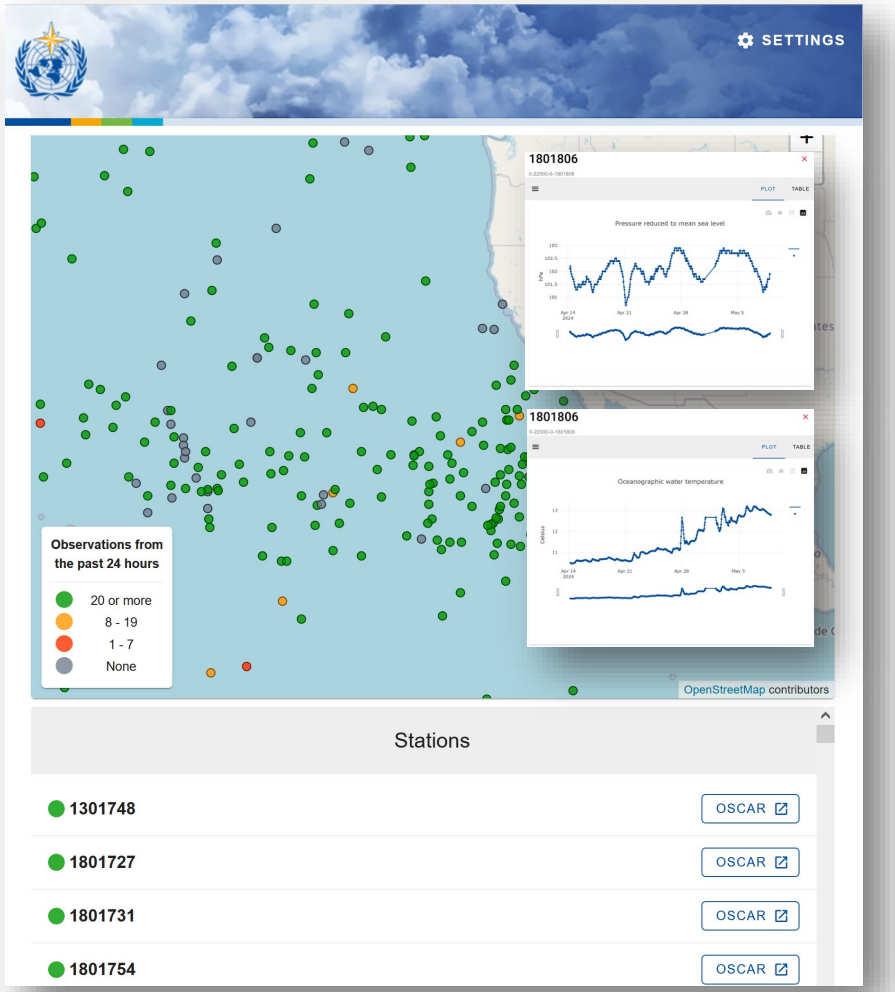
WIS2BOX Pilot lessons learned

Benefits to Data Providers

- Open-source tool kit for data sharing on WIS2 network, maintained by the WMO
- Opportunity for community engagement and capacity building
- Empowers data providers to share their data
- Includes dashboard to review and plot platform data from WIS2 and access platform metadata from OSCAR/Surface

Work for the DBCP and Data Providers

- High bar of entry for new users without platform templates
  - BUFR Templates for Moorings (TM315008), Drifters (TM315009) and First5 Waves (TM315010) data on GTS need to be adapted for WIS2.
  - Newly observed parameters may require BUFR template expansion or creation
  - Templates needed for their WIGOS metadata to fully interpret the observed sensor data.
- Detailed platform metadata can enrich existing datasets
  - DBCP GHRSST Pilot highlighted need for detailed platform metadata and its ability to improve the value of existing datasets for end-users.



https://wis2.ldl.ucsd.edu