



PO.DAAC Data Archival/Distribution Support of NASA Salinity

V. Tsontos, J. Vazquez & Y. Jiang

Jet Propulsion Laboratory, California Institute of Technology

NASA OSST Meeting

vtsontos@jpl.nasa.gov

2 New Satellite Data Collection Releases (7 datasets)

- 2019-08-29 [RSS SMAP-SSS V4.0](#)
 L2C + L3 SSS 8day-running & Monthly (3)
- 2020-03-18 [JPL SMAP-SSS CAP V4.3](#)
 L2B NRT & delayed mode products + L3 SSS 8day-running & Monthly products (4)

These are the 2 SMAP-SSS collections discoverable/available on the PO.DAAC portal and integrated into tools/services (Drive, OPeNDAP, THREDDS, LAS, Metrics)

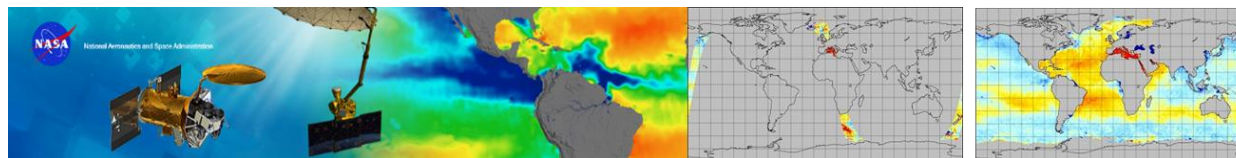
<https://podaac.jpl.nasa.gov/datasetlist?search=smap>

Upcoming Releases: TBD

All Prior RSS and JPL SMAP-SSS Versions/Datasets are archived...

- ... but no longer discoverable via the PODAAC portal or NASA Earth Data Search, and have been removed from public facing tools/services
- Policy: older datasets are fully retired 6 months after new version is released to allow for a period of inter-comparison (after that time datasets move to the /retired portion of the archive and Drive).

| Provider | Total Versions | Total Datasets |
|----------|----------------|----------------|
| RSS | 3 | 21 |
| JPL | 4 | 14 |

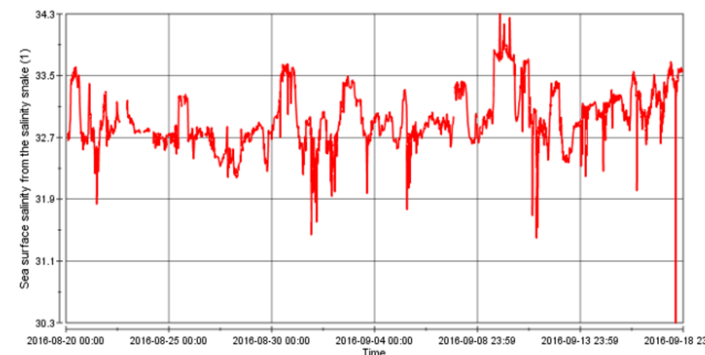
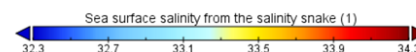
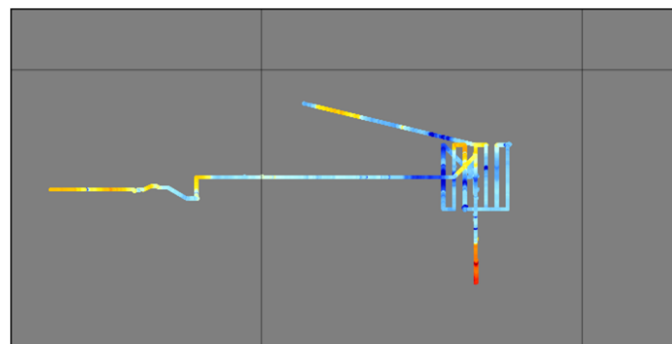
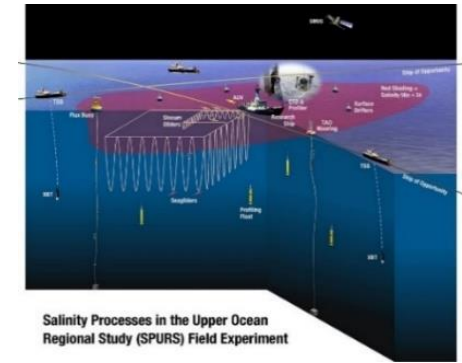




New *In-situ* Data Collection Releases (14 datasets)

- 2019-10-24 [SPURS-2 Field Campaign datasets](#) (8)
 PAL (Acoustic Passive Listener), Seaglider, drifter (multiple types), towed Surface Salinity Profile (SSP), Research Vessel meteorology & surface water observations, Pico Mooring, Neutrally Buoyant Float, and underway data from the sailing vessel Lady Amber
- 2019-8-13 [SPURS-2 Field Campaign Datasets](#) (6)
 salinity snake, waveglider, rawinsonde, underway CTD (uCTD), underway surface profiling system (USPS) with associated thermosalinograph (TSG) data, and controlled flux technique (CFT) video imagery data

Upcoming - Final batch SPURS2 data (eg. WHOI mooring, ...)
 - Saildrone Arctic campaign data (April 2020)



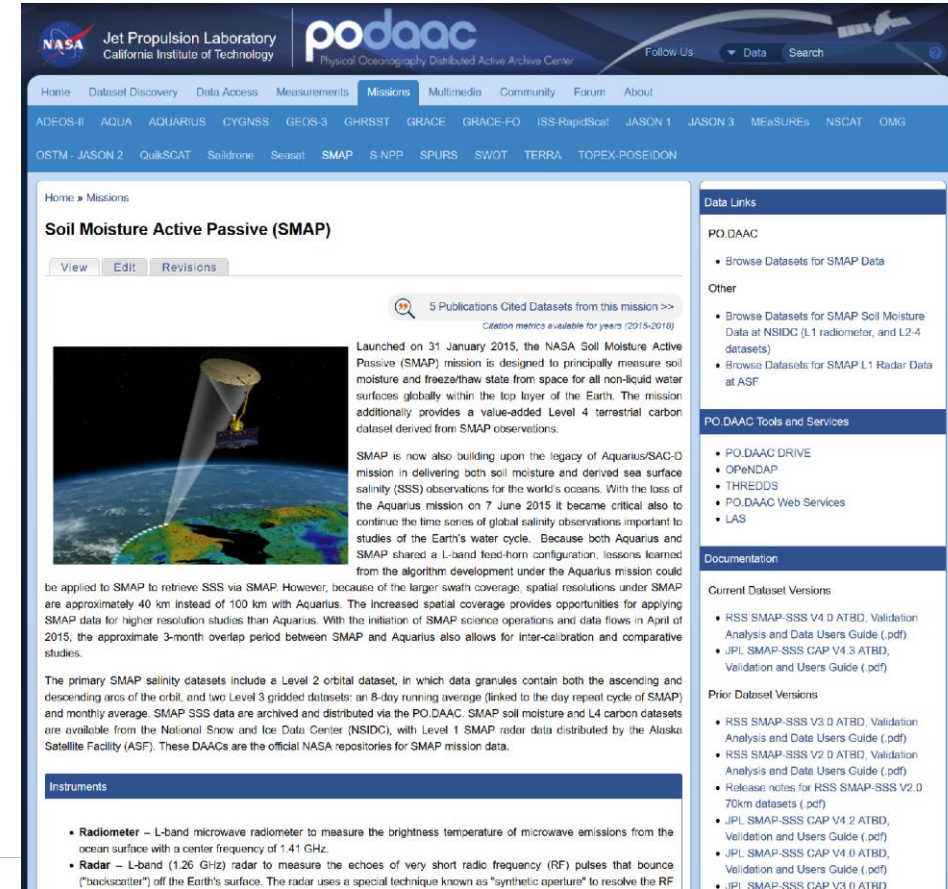
SPURS2 salinity snake along-track SSS and associated time series

SCP Validation support

- Working closely with teams at RSS and JPL
- Sairdrone California/Baja and future Arctic data used in ongoing validation efforts

User Services

- Ongoing user support via:
 - PODAAC Helpdesk podaac@podaac.jpl.nasa.gov
 - Forum <https://podaac.jpl.nasa.gov/forum/>
- Animations (3): <https://podaac.jpl.nasa.gov/AnimationsImages/Animations>
- User/Data Metrics & Reporting
- Dataset Citation Metrics on portal (*new*)
- Mission Pages:
 - [SMAP-SSS](#)
 - [SPURS2](#)
 - [Sairdrone](#)



Home » Missions
Soil Moisture Active Passive (SMAP)
 View Edit Revisions

5 Publications Cited Datasets from this mission >>
Citation metrics available for years (2015-2018)

Launched on 31 January 2015, the NASA Soil Moisture Active Passive (SMAP) mission is designed to principally measure soil moisture and freeze/thaw state from space for all non-liquid water surfaces globally within the top layer of the Earth. The mission additionally provides a value-added Level 4 terrestrial carbon dataset derived from SMAP observations.

SMAP is now also building upon the legacy of Aquarius/SAC-D mission in delivering both soil moisture and derived sea surface salinity (SSS) observations for the world's oceans. With the loss of the Aquarius mission on 7 June 2015 it became critical also to continue the time series of global salinity observations important to studies of the Earth's water cycle. Because both Aquarius and SMAP shared a L-band feed-horn configuration, lessons learned from the algorithm development under the Aquarius mission could be applied to SMAP to retrieve SSS via SMAP. However, because of the larger swath coverage, spatial resolutions under SMAP are approximately 40 km instead of 100 km with Aquarius. The increased spatial coverage provides opportunities for applying SMAP data for higher resolution studies than Aquarius. With the initiation of SMAP science operations and data flows in April of 2015, the approximate 3-month overlap period between SMAP and Aquarius also allows for inter-calibration and comparative studies.

The primary SMAP salinity datasets include a Level 2 orbital dataset, in which data granules contain both the ascending and descending arcs of the orbit, and two Level 3 gridded datasets: an 8-day running average (linked to the day repeat cycle of SMAP) and monthly average. SMAP SSS data are archived and distributed via the PO.DAAC. SMAP soil moisture and L4 carbon datasets are available from the National Snow and Ice Data Center (NSIDC), with Level 1 SMAP radar data distributed by the Alaska Satellite Facility (ASF). These DAACs are the official NASA repositories for SMAP mission data.

Instruments

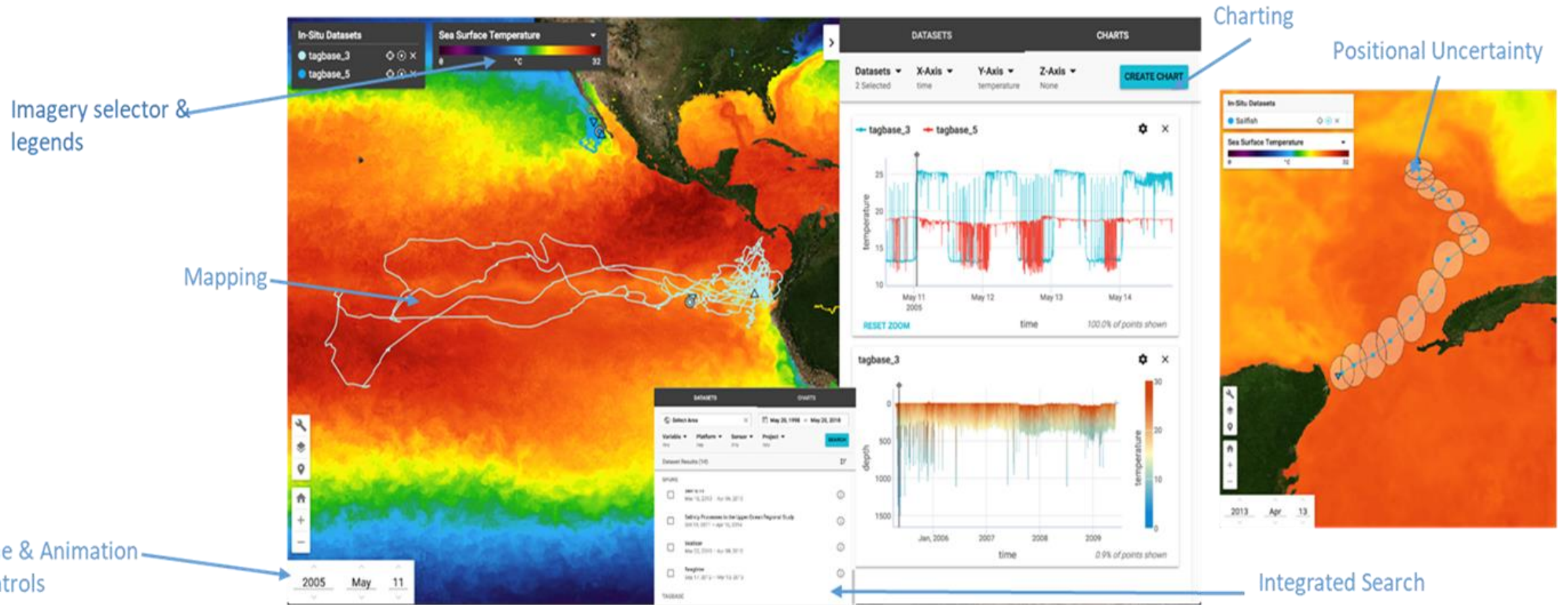
- **Radiometer** – L-band microwave radiometer to measure the brightness temperature of microwave emissions from the ocean surface with a center frequency of 1.41 GHz.
- **Radar** – L-band (1.26 GHz) radar to measure the echoes of very short radio frequency (RF) pulses that bounce ("backscatter") off the Earth's surface. The radar uses a special technique known as "synthetic aperture" to resolve the RF

Publications citing datasets related to SMAP
Citation metrics available for years (2015-2018)

Search:

| Year | Citation | Dataset |
|------|---|-------------------------|
| 2018 | New SMOS Sea Surface Salinity with reduced systematic errors and improved variability, Remote Sensing of Environment, https://doi.org/10.1016/j.rse.2018.05.022 | (No Dataset Referenced) |
| 2018 | Detection of Intraseasonal oscillations in SMAP salinity in the Bay of Bengal, Geophysical Research Letters, https://doi.org/10.1029/2018GL078662 | (No Dataset Referenced) |
| 2018 | Role of El Niño Southern Oscillation (ENSO) Events on Temperature and Salinity Variability in the Agulhas Leakage Region, Remote Sensing, https://doi.org/10.3390/rs10010127 | (No Dataset Referenced) |
| 2018 | Level 3-monthly average SMAP SSS (BETA: version2.0, validated release) data at 0.25° spatial resolution is obtained from https://podaac.jpl.nasa.gov/dataset/SMAP during 2015–2016 (Meissner and Wentz, 2016). Salinity from SMAP radiometer can monitor El Niño, Journal of Marine Systems, https://doi.org/10.1016/j.jmarsys.2016.07.008 | (No Dataset Referenced) |
| 2018 | Investigating the Utility and Limitation of SMAP Sea Surface Salinity in Monitoring the Arctic Freshwater System, IGARSS 2018 - 2018 IEEE International Geoscience and Remote Sensing Symposium, https://doi.org/10.1109/IGARSS.2018.8519602 | (No Dataset Referenced) |

Total number of records: 5

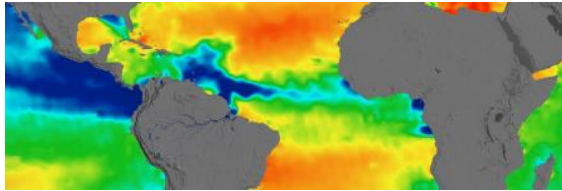


Development efforts towards a Generalized Satellite-in situ data visualization tool

<https://www.youtube.com/watch?v=5ThD9T3pXpU>

If your salinity project produces data products of use/importance to the broader community, you have a NASA funding agency requirement to archive your data at a DAAC, and you stated in your proposal that you would do so, then ...

- **Contact the PODAAC proactively to inform us of your dataset, timeline and data submission plans**
- **While PODAAC encourages relevant submissions, it also has a review, approval and prioritization process for archival of candidate PI datasets**
- **Requirements for Archival:**
 - “Dataset Submission Agreement” is completed between Data provider and PODAAC
 - Data product(s) adheres to data interoperability standards (CF/ACDD metadata, netCDF/HDF file formats) per https://podaac.jpl.nasa.gov/PO.DAAC_DataManagementPractices
 - Technical Interfaces to access the data are defined & documented (ICD)
 - Data are accompanied by Technical Documentation (eg. ATBD, User Guide/Format Spec, Validation Report)



Questions ?