



NASA RDAC Report to the GHRSSST Science Team

Edward Armstrong, Jorge Vazquez, Wen-Hao Li, Toshio Chin, and Zhijin Li
Physical Oceanography DAAC (PO.DAAC)

20th GHRSSST Science Team Meeting

Frascati, Italy

3 June 2019



National Aeronautics and
Space Administration

Jet Propulsion Laboratory
California Institute of Technology
Pasadena, California

© 2019 California Institute of Technology.
Government sponsorship acknowledged.



NASA RDACs

- * Current components
 - * **JPL RDAC**
 - * MODIS Aqua and Terra L2P
 - * VIIRS L2P
 - * MUR L4
 - * **JPL_OUROCEAN RDAC**
 - * G1SST L4



MODIS and VIIRS L2P

- * Aqua and Terra L2P, v2014.0
 - * https://podaac.jpl.nasa.gov/dataset/MODIS_T-JPL-L2P-v2014.0
 - * [tps://podaac.jpl.nasa.gov/dataset/MODIS_A-JPL-L2P-v2014.0](https://podaac.jpl.nasa.gov/dataset/MODIS_A-JPL-L2P-v2014.0)
 - * Used as input layer in State Of The Ocean (SOTO) visualization tool
- * VIIRS L2P, v2016.0
 - * https://podaac.jpl.nasa.gov/dataset/VIIRS_NPP-JPL-L2P-v2016.0
- * MODIS and VIIRS reprocessing's proposed in 2019 or 2020
- * Operations nominal. Data within 3-4 hours of observation

G1SST



- * G1SST status

- * The G1SST 2DVAR blending algorithm has been revised for blending L2 VIIRS SSTs
- * Planned:
 - * Upgrade the 2DVAR algorithm for more accurately accounting for observational errors and time difference of measurements
 - * GDS2 implementation



MUR L4

- * MUR improvements

- * Planned:

- * New 25-km grid global MUR (by-)product
 - * Addition of anomaly SST (forward stream in version 4.1)
 - * Addition of VIIRS L2P SST (for version 5)
 - * Addition of RAN NOAA-17 L2P (for version 5)
 - * Migration to new JPL hardware
 - * Interpolation parameters based on dynamics (see Chin poster)



COVERAGE

(CEOS Ocean Variables Enabling Research and Applications for GEO)

- * Collaborative effort within CEOS and 3-year NASA project involving the four Ocean VCs (SST, OST, OCR, OSVW) and GEO projects (MBON, Blue Planet) to enable more widespread use of ocean satellite data in support of applications.
- * Implement a data rich technology platform for more seamless delivery of analysis ready ocean data to demonstrate the value added of multivariate ocean data integration in support of science, applications, and public engagement.
- * Four phases of development (A-D). Phase A, the technical scoping and preparatory activities, completed:
 - * Inventory/review of target Interagency datasets
 - * Design of prototype COVERAGE technical system architecture for implementation in Phase B
 - * Specification of a focal COVERAGE pilot application in support of GEO-MBON for implementation in Phase B
 - * Processing of MUR-SST product at 0.25 degrees for inclusion in COVERAGE
 - * Initial work addressing identified L4 ocean color product gap in coordination with OCR-VC that will be further developed during Phase B.
- * Phase B task plan formulated & proposal submitted to NASA. The aim is to implement a demonstration COVERAGE system for community comment within a year.
- * COVERAGE involves extensive, ongoing stakeholder engagement and outreach



COVERAGE

CEOS Ocean Variables Enabling
Research & Applications for GEO

NASA Physical Oceanography



- * **National Ocean Partnership Program (NOPP) , MISST: Continuing the GHR SST Partnership and Arctic Data** (Chelle Gentemann, Earth Space Research)
 - * Collaboration with Saildrone Project to support future deployments in the Arctic. Current Arctic deployment (began May 1) including 5 Saildrones has already begun. Plans for archiving data at the PO.DAAC
 - * Saildrone California/Baja Deployment archived at the PO.DAAC. Includes SST data from in-situ radiometer and CTD
- * Ongoing support for CEOS SST Virtual Constellation
- * **Publications**
 - Sea Surface Temperature Retrievals from Remote Sensing, 2018, Editors Vazquez-Cuervo, J. and X. Li, 2018, Topical Collection for Special Remote Sensing Issue on Sea Surface Temperature, MDPI.
 - SST White Paper (submitted to Frontiers) in support of OceanObs 2019.
 - P. J. Minnett, A. Alvera-Azcárate, T. M. Chin, G. K. Corlett, C. L. Gentemann, I. Karagali, X. Li, A. Marsouin, S. Marull, E. Maturi, R. Santoleri, S. Saux Picart, M. Steele, and J. Vazquez-Cuervo, 2018, Half a Century of Satellite Remote Sensing of Sea Surface Temperature, under review Remote Sensing of the Environment.
 - J. Salat, J. Pascual, M. Flexas, T. M. Chin, J. Vazquez-Cuervo, 2018, 45 years of oceanographic and meteorological observations at a coastal station in the NW Mediterranean: A ground truth for satellite observations, accepted Ocean Dynamics, Ref.: Ms. No. ODYN-D-18-00177R1