



National Aeronautics and
Space Administration

Jet Propulsion Laboratory
California Institute of Technology
Pasadena, California

SWOT* - Surface Water and Ocean Topography Mission*



1st Applications User Workshop

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Applications Leads

SWOT* Applications Working Group (SAWG)

Leads

1. SWOT Applications Leads, NASA
– M. Srinivasan, C. Peterson,
CNES – A. Andral, M. Dejus
5. Ocean Lead, NASA – Yi Chao, RSS
6. Hydrology Lead, NASA – Ed
Beighley, Northeastern U.
7. Ocean Lead, CNES– Rosemary
Morrow, LEGOS
8. Hydrology Lead, CNES– J-F.
Cretaux, LEGOS

Team

1. Bob Arnone, USM at Stennis SC
2. Sylvain Biancamaria, LEGOS
3. Phil Callahan, Caltech JPL
4. Jessica Hausman, PODAAC JPL
5. Faisal Hossain, U. Washington
6. Laurence Houpert, CNES
7. Gregg Jacobs, NRL
8. Alexander Kurapov, U. Oregon
9. Robert Leben, U. Colorado
10. Pierre-Yves Le Traon, Ifremer-
Mercator Ocean
11. Dennis Lettenmaier, U. Washington
12. Delwyn Moller, RSS
13. Steve Nerem, U. Colorado
14. Tamlin Pavelsky, U. North Carolina
15. Robert Saint-Jean, CSA

SWOT* Applications – Focus

- International components and cooperation
- Applications life cycle through mission phases
- Applications Plan
- Early Adopter Program
- Suggested pillars;
 - Hydrology**: developing world water problems, food security (flooding & drought)
 - Oceanography**: coastal applications (circulation, impacts), marine operations support/open ocean issues
 - Climate**: regional capabilities, coastal and agricultural impacts

Key Messages

- SWOT* is a proposed research mission, not an application mission
- The SWOT* mission would not develop the application, it would develop the right products that encourage the appropriate use of SWOT* observations (by users)
- Data availability and access are critical to success

Objectives

Outreach:

- Inform the stakeholders about the projected SWOT capabilities (website, workshop), develop communication strategies to target and support requirements of the user community etc...

The improvement of the existing applications

- Sea transport shipping, fisheries, the seasonal meteorology (i.e., El Nino), forecast of extreme events (cyclones, storms) and the monitoring of climatic parameters

New perspectives of applications for coastal areas

- In particular for coastal management and off shore resource exploitation mining, oil continental shelves

The creation of new environmental services

- In hydrology of inland waters (lakes, reservoirs, major rivers) and across the world, thus offering opportunities for water resources management, estuaries, the risk prevention of flood, the prevention of the propagation of epidemy

An open data policy

- This will strengthen the services with added values in the field of the oceanography and create new services in the field of water resources

SWOT* Applications Program

SWOT* mission is implementing an applications approach at the project level, supported by NASA HQ, by CNES and by the science leads.

- SWOT* Applications Plan
- SWOT* Early Adopter Program Guide
- SWOT* 101 presentation
- SWOT* User Survey
- User workshops

Applications web page:
<http://swot.jpl.nasa.gov/applications>

SWOT* User Survey

Identify the ways the proposed SWOT mission may be useful to operational, private, institutional, and other individuals and organizations .

- **PRODUCTS**

1. For ocean products: What level of products are you interested in?:
2. For hydrology products: What level of products are you interested in?:

- **Temporal frequency**

How often does the data need to be updated

- **Data latency**

How timely must information be from data collection

- **Data format**

What is the best data format for your application?

SWOT* User Survey (Continued)

- **DATA VOLUME**

- **DATA ACCESS**

How would you prefer to get SWOT* products?

- **DOMAIN of INTEREST**

What is your main domain of interest?

Geographically, what is your region of interest?

- **USER INFORMATION**

What your professional training expertise or experience

- **Miscellaneous**

What are your priorities

What information do you need to understand /use data?

Survey link: <http://swot.jpl.nasa.gov/1stUserWorkshop2015/>
Username/password (case sensitive): SWOT/SWOTUser15

Agenda

8:30 am User Workshop

Welcome/introductions: M. Srinivasan/A. Andral (10 min)

Nadir Altimetry: E. Bronner (15)

SWOT* 101: T. Pavelsky and R. Morrow (40)

Discussion/questions (15)

AirSWOT: G. Sadowy (15)

Examples of existing and current applications relevant to SWOT*:

F. Hossain: **Jason-2 toolbox**, operational flood forecasting (15)

Y. Chao: **Estuary/delta** applications (15)

10:35 am– Break (20)

10:55 am – User Workshop

Examples of existing and current applications relevant to SWOT* (cont.):

P.Y. LeTraon: Operational oceanography appl - **Mercator Ocean & Copernicus** (15)

G. Jacobs: SWOT* **US GODAE Operational Applications** (15)

K. Andreadis (remote): **Flood modeling** (15)

E. Beighley: **Tennessee Valley reservoirs** (15)

Discussion (15)

12:10 pm – Lunch (1:15)

Agenda

1:25 pm – User Workshop

Water Management Application Demo using Satellite-based Water Elevation
Data: F. Hossain (1:00)

2:25 pm User Workshop

Simulated and mission data products: E. Rodriguez (40)

Data products discussion: P. Callahan, E. Rodriguez (15)

Feedback from participants (40) Facilitators: A. Andral, C. Peterson, M. Srinivasan, F. Hossain, T. Pavelsky, R. Morrow

---END OF USER WORKSHOP---

4:00 pm – Break (20)

4:20 pm SAWG

Discussion, Recommendations, Roadmap and Conclusions

NRT Ocean-Navy products: C. Peterson, G. Jacobs, SWOT* Project

5:30 pm Adjourn