

SWOT Science Team & Validation Meeting, June 17-21, 2024

Chapel Hill, North Carolina

Background

The SWOT mission brings together communities focused on a better understanding of the world's oceans, its terrestrial surface waters, and the coastal and estuarine environments that lie in between. U.S. and French oceanographers and hydrologists and international partners have joined forces to develop this satellite mission to make the first global survey of Earth's surface water, observe the fine details of the ocean's surface topography, and measure how these water bodies change over time.

This meeting will take place in three parts. Day 1 will focus on exciting new results and the potential for future advances from SWOT, and a broad spectrum of partners will be invited to participate in person or online. On Days 2 and 3, the SWOT Project will present results of its official validation efforts and convey the current best understanding of the mission's capabilities relative to its science requirements. Days 4 and 5 will return to the Science Team Meeting portion of the agenda, with both breakout and plenary sessions.

Meanwhile, we will have three poster sessions running concurrently with the oral sessions to present science results in detail. Day 1 will focus on posters representing progress from current science team projects. Days 2 and 3 will focus on posters from early career researchers working on SWOT. Day 4 will represent an opportunity for newly selected projects to present posters on their planned projects.

Meeting Objectives

This is the first science team meeting in which the team will have had access to substantial amounts of SWOT data for long enough to conduct meaningful analyses. It is also the final meeting of the current science team and the first meeting of the incoming science team. As such, our objectives are to:

- (1) Hear the SWOT Project Team's assessment of the instrument performance and the strengths, weaknesses, and issues of the current version of the data set,
- (2) Present and discuss exciting new results that leverage SWOT data and continue the discussion of SWOT's performance for conducting scientific analysis.

SWOT Science Team Preliminary Agenda: 17-21 June 2024

Monday 17 June - Plenary

8:00-9:00 Registration/Coffee

09:00 Welcome & Meeting Objectives (T. Pavelsky & Science Leads; 5 min)

09:05 First Science Results from SWOT

Speakers TBD

10:45 Break (15 min)

11:00 Realizing the Potential of SWOT in Science and Applications

Speakers TBD

12:30-13:30 Lunch break

13:30 SWOT Round Table Panel : Bringing SWOT to wider applications

Speakers TBD

15:00 Afternoon break (30 min)

SWOT Project Updates, Data Access and Tools

15:30 SWOT NASA/CNES Program status (N. Vinogradova Shiffer and Y. Faugere)

15:45 SWOT Project Status (P. Vaze and C. Marechal)

16:15 Bringing SWOT Data to users: NEW Products and Tools from PO.DAAC, Hydroweb.next, and AVISO

16:45 Questions & Discussion

17:00 Ocean & Hydrology Poster Session: Part 1 (Science Team Posters 2020-2024)

Tuesday, June 18th

Validation Meeting Agenda	Time	Duration	Presenter/Coordinator
Tuesday, June 18th			
1 Meeting Objectives	8:00	0:10	Shailen Desai/Nicolas Picot
2 POD Validation	8:10	0:15	Nicolas Picot (on behalf of POD team)
3 Nadir Altimeter Validation	8:25	0:30	Matthias Raynal
4 Radiometer Validation	8:55	0:15	JPL/CNES (TBD)
5 Reconstructed Attitude Validation	9:10	0:20	Nathalie Steunou
6 KaRIn Instrument Validation	9:30	0:15	Eva Peral
Break	9:45	0:30	
7 KaRIn Calibration	10:15	0:15	Curtis Chen
8 KaRIn Data Self Consistency	10:30	0:20	Albert Chen
9 KaRIn LR Processor Validation	10:50	0:15	Albert Chen
10 KaRIn LR Global Statistical Validation	11:05	0:30	Matthias Raynal
11 KaRIn CA Crossover MASS/Lidar Validation	11:35	0:30	Luc Lenain/Curtis Chen
Lunch	12:05	1:00	
12 KaRIn CA Crossover in situ Validation	13:05	0:20	Jinbo Wang
13 KaRIn LR Features/Issues	13:25	0:40	Albert Chen
14 Crossover Calibration (Operational and Reprocessing) Validation	14:05	0:30	Matthias Raynal
15 XOverCal Plans for Future	14:35	0:15	Nicolas Picot
Break	14:50	0:30	
16 KaRIn SWH Validation	15:20	0:15	Alejandro Bohe
17 KaRIn LR Data Over/Near Land	15:35	0:10	Albert Chen
18 KaRIn LR Requirements Status and Plans for Future	15:45	0:15	Curtis Chen/Alejandro Bohe
19 Project (NASA and CNES) HR Field Data Collection	16:00	1:00	Colin Gleason, Jean-Francois Cretaux, Nicolas Picot
Day 1 End	17:00	9:00	

Wednesday, June 19th

Wednesday, June 19th			
1 Hydrology Algorithm Overview and Status	8:00	0:15	Curtis Chen/Roger Fjørtoft
2 Pixel Cloud Product Validation	8:15	0:45	Brent Williams, Roger Fjørtoft
3 Pixel Cloud Product Features/Issues	9:00	0:55	Brent Williams, Roger Fjørtoft
Break	9:55	0:30	
4 River Product WSE and Slope Validation, Features, and Issues	10:25	0:50	Cassie Stuurman
5 River Product Area Validation, Features, and Issues	11:15	0:45	Jw De Bleser
Lunch	12:00	1:00	
6 Lake Product Validation	13:00	0:45	Claire Pottier, Roger Fjørtoft
7 Lake Product Features/Issues	13:45	0:40	Claire Pottier, Roger Fjørtoft
8 Raster Validation	14:25	0:15	Alex Corben
9 Raster Product Features/Issues	14:40	0:20	Alex Corben
Break	15:00	0:30	
10 Wetland Characterization	15:30	0:10	Tamlin Pavelsky
11 Floodplain DEM Status and Plans	15:40	0:10	Damien Desroches/Roger Fjørtoft
12 HR Requirements Status and Plans for Future	15:50	0:15	Curtis Chen/Roger Fjørtoft
13 Validation Meeting Wrapup and Plans for Future	16:05	0:10	Shailen Desai/Nicolas Picot
14 Discussion	16:15	0:45	All
Day 2 End	17:00	9:00	

17:00 Ocean & Hydrology Poster Session: Part 2 (Early Career Posters) - Tuesday & Wednesday

Evening Event (Wednesday)

18:00-18:30 Wednesday Buses Leave from Friday Center for Evening Event at Haw River Ballroom, Saxapahaw, NC

21:30-22:30 Wednesday Buses Return from Haw River Ballroom to Friday Center

Thursday June 20 - Splinter sessions

8h-9h : Coffee

Working group discussions on 3 main questions:

- Is SWOT meeting requirements, pre-launch expectations
- New results being revealed (tell Nadya/Yannice what you love about SWOT)
- Challenges remaining: steps forward

<u>Hydrology</u>	<u>Cryosphere</u>	<u>Oceanography</u>
09:00, SLEW Exact Agenda TBD 10:30 Morning break 11:00, DAWG Exact Agenda TBD	9:00-10:30 Kickoff Meeting	9:00 Regional Validation 10:30 Morning break 11:00, Tides / internal tides

12:30 -14h : Lunch break (including Applications Lunch)

<u>Hydrology</u>	<u>Deltas, Estuaries and Coastal (DEC)</u>	<u>Oceanography</u>
14:00 River Science Working Group	14:00 Validation in Estuaries (Simard,	14:00 - high-resolution modeling

<p>Exact Agenda TBD</p> <p>15:30 Afternoon break (30 min)</p> <p>16:00 - 16:30 SWOT and Global Models 16:30 - 16:50 Updates on SWORD 16:50 - 17:10 Updates on PLD 17:10 - 17:30 Planning Working Groups for Next Science Team</p>	<p>Matte, Bell, Ayoub, etc)</p> <p>15:30 Afternoon break (30 min)</p> <p>14:00 DEC TBD</p>	<p>14:45 - reconstruction/mapping (inversion/data assimilation)</p> <p>15:30 Afternoon break (30 min)</p> <p>16:00 waves, wind and MSS</p> <p>17:10 - 17:30 Planning Working Groups for Next Science Team</p>
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17:30 Ocean & Hydrology Poster Session: Part 3 (New Science Team members 2024+)

Friday June 21 - Splinter sessions

Welcome Coffee

Hydrology

SWOT Science Going Forward

9:00 Cross-working group discussion of key findings & needs

- What have we learned so far about what SWOT HR data are good at scientifically?
- What are the areas we've learned have issues?
- Are there new data products we need to develop?
- Are there specific issues with existing data products that we think should be high priorities?

10:30 Coffee

11:00 Plan & Discussion for Next Steps on Validation Data Collection
(T. Rowley, TBD on French side)

11:30 TBD

12:00 TBD

Oceanography

SWOT Science going forward

9:00 LR data products L2 -> L3 -> L4

10:30 Coffee

11:00 Cross-working group discussion of key findings and needs

12:30 Lunch (60 min)

Friday June 21 - Plenary

13:30 Afternoon Plenary

Synthesised view on 3 main questions: (Science leads : coastal & hydrology & oceanography & coastal)

- Is SWOT meeting requirements, pre-launch expectations
- New results being revealed (tell Nadya/Yannice what you love about SWOT)
- Challenges remaining : steps forward

SWOT Applications

New working group on open science/software (J. Wang, S. Gille, C. Gleeson, C. Germaine)

Discussion on questions/concerns arising from meeting (T. Farrar & T. Pavelsky & Science Leads)

SWOT Validation Project/Science Team summary report

SWOT Validation publications,

Future communication & meetings

17:00 End of meeting