

Aquarius Science Calibration/Validation Workshop – Oct 29, 2012 – Nov 1, 2012

Location: Building 34, Room number W150, GSFC

Local Host: David Adamec, 301-602-8394; Victor Freeman, 301-614-5675

October 29

8:30: Welcome

8:35: Review of Post Launch CAL/VAL plan and workshop objectives

- 1) Assess radiometer calibration performance
- 2) Assess antenna pattern correction
- 3) Assess the performance of RFI mitigation algorithm
- 4) Assess the scatterometer performance
- 5) Assess the accuracy of geophysical modeling algorithms
- 6) Assess the overall accuracy of current product
- 7) Assess special products – soil moisture, ocean winds, freeze-thaw
- 8) Make decisions on the path toward v2 processing

8:45 Project and Instrument Status - Gene

9:00 Status of ground processing system (schedule, testing and open issues) - Fred

9:30 Status of previous action items - Simon

10:00 Break

10:15am-12:00pm Salinity accuracy assessment session (Gary)

1. Lagerloef: Data validation and accuracy assessment overview (50 min)
2. Guimbard: Aquarius/SMOS inter-comparisons (20 min)
3. Hacker/Melnichenko: Global and regional SSS asc/dsc and inter-beam biases and temporal variability in Aquarius V1.3.5 L2 data (15 min)
4. Lang: Precise Dielectric Measurements of Seawater at L Band: A Progress Report (15 min)

12:00pm Lunch

13:30pm-15:30pm Radiometer Calibration Working Group Report and Presentations

1. Report (initial plan, status, plan forward) – Piepmeier
2. Regional dTA analysis – Piepmeier
3. Separating instrument from model errors - Lagerloef
4. Antarctica and Separating instrument from model errors – Brown
5. Cold sky cal – Dinnat
6. Warm end cal – Bindlish
7. Closing comments – Piepmeier

15:30pm Break

15:40pm-17:00pm Antenna Pattern Correction Working Group Report and Presentations

1. Working Group Report and Overview (Shannon)
2. APC/Cross-pol correction (Thomas)
3. Cold sky spill-over measurement (Emmanuel)
4. Land correction (Frank, Shannon)
5. Analysis of minor APC terms (TBD)

17:00pm End of day 1

Splinters

October 30

8:30am-9:30am RFI Working Group report and presentations

1. Status of Radiometer RFI Detection and Mitigation, Paolo
2. Optimized Aquarius RFI algorithm parameters versus location and orbit node, David C. and Chris

9:30am-10:30am Scatterometer performance

1. Scatterometer calibration stability - Greg
2. Scatterometer radiometric and X-pol calibration (Alex)
3. Scatterometer wind speed assessment (Alex)

10:30am Break

10:45am-15:00pm Geophysical Modeling Assessment Session

10:45am Geophysical Model Overview: Issues exist (asc/dec & wiggles) and we seek insight into areas where model may be a source of error – forward mode, retrieval model, ancillary data, GSFC simulator (Le Vine/Wentz)

11:15am TA_exp (Meissner)

11:30am Roughness Correction Approach, Validation and Problem Areas (Meissner)

12:00pm Lunch

13:30pm Ocean wave impacts on Aquarius radar and radiometer measurements, Vandemark

13:45pm Roughness correction algorithm and comparison with scatterometer, Hejazin

14:00pm Rain effects on TB and radar sigma0 Tang

14:15pm Impact of Rain on SSS retrieval Jones

14:30pm Ascending/descending bias: Correlation with galactic background Hong

14:45pm Correlation with geophysical parameters Neumann

15:00pm Break

15:15pm-17:00pm Special products

1. Combined Active/Passive (CAP) ocean salinity and wind (Simon)

2. Soil moisture (Rajat)

3. Gridded TB/sigma0 (Xiaolan Xu)

17:00pm End day two

Oct 31

8:30am-10:15am MWR status and algorithm update

8:30am MWR Tb calibration, Linwood Jones

8:50am CONAE geophysical retrievals, Linwood Jones

9:10am RemSS geophysical retrievals, Joel Scott

9:30am Break

9:50am Cal/Val summary – recap of status, issues and plan to move forward

12:00pm Lunch

1:30pm-5:00pm Science presentations (20 min each including discussion)

1:30pm Rabolli: SAC-D Instruments Science Status

1:50pm Wentz: Merged Aquarius, MWR, WindSat, and F17 Data Set for Extended Cal/Val

2:10pm Reagan: Comparison analysis between NODC in situ analyzed sea surface salinity and Aquarius sea surface salinity

2:30pm Vinogradova: Estimates of observational errors related to small-scale horizontal and vertical variability in salinity fields

2:50pm Melnichenko: Reducing effects of inter-beam biases and ascending-descending differences with spatial objective analysis of Aquarius SSS: Level 4 gridded data

3:10pm Break

3:20pm Grodsky: Haline hurricane wake in the Amazon/Orinoco plume

3:40pm Qu: Formation of salinity maximum water and its contribution to the overturning circulation in the North Atlantic as revealed by a global GCM

4:00pm Matano: South Atlantic Circulation and Salinity

4:20pm Liu: Location of salinity fronts as related to surface temperature and water flux

4:40pm Kao: Tropical SSS evolution during Aquarius year-1 data.

5:00pm adjourn for the day

Evening - Evening social (dinner)

November 1

8:30am-12:00pm Science presentations (cont.)

8:30am Lindstrom: SPURS report

9:00am deCharon: E_PO including SPURS

9:20am Chao: SPURS in situ data analysis and Aquarius validation

9:40am Giulivi: Aquarius analysis of eddy processes within the subtropical regimes.

10:00am Asher: Very Near Surface Salinity Gradients Measured Using a Towed Profiler During STRASSE 2012

10:20am Break

10:40am Xu: Freeze/Thaw detection algorithm using gridded Aquarius data with Changing in Greenland

11:00am Kim: Modeling land surface sigma0

11:20am Weissman: TBD

11:40am Lagerloef: General discussion and issues

- a. Joint Aquarius/SMOS workshop, IFREMER, 15-17 April 2013
- b. Key working groups: Need members!
 - i. Surface stratification: Co-Chairs: Jacqueline Boutin (LOCEAN) and Yi Chao (RS Solution)
 - ii. Salinity inter-calibration: Co-Chairs: Gary Lagerloef (ESR), David LeVine (NASA), Yann Kerr (CESBIO), Jordi Font (ICM/CSIC)
- c. AGU Special Session, Monday 3 December 2013: Science Results From the Aquarius and SMOS Ocean Salinity Missions
- d. Next Aquarius/OSST Science Meeting discussion
- e. OS-2013 Special Session
- f. Special JGR-Ocean section: Early scientific results from the salinity measuring satellites Aquarius/SAC-D and SMOS. **Submissions open**

Feb 2013 – May 2013

12:00pm Adjourn workshop