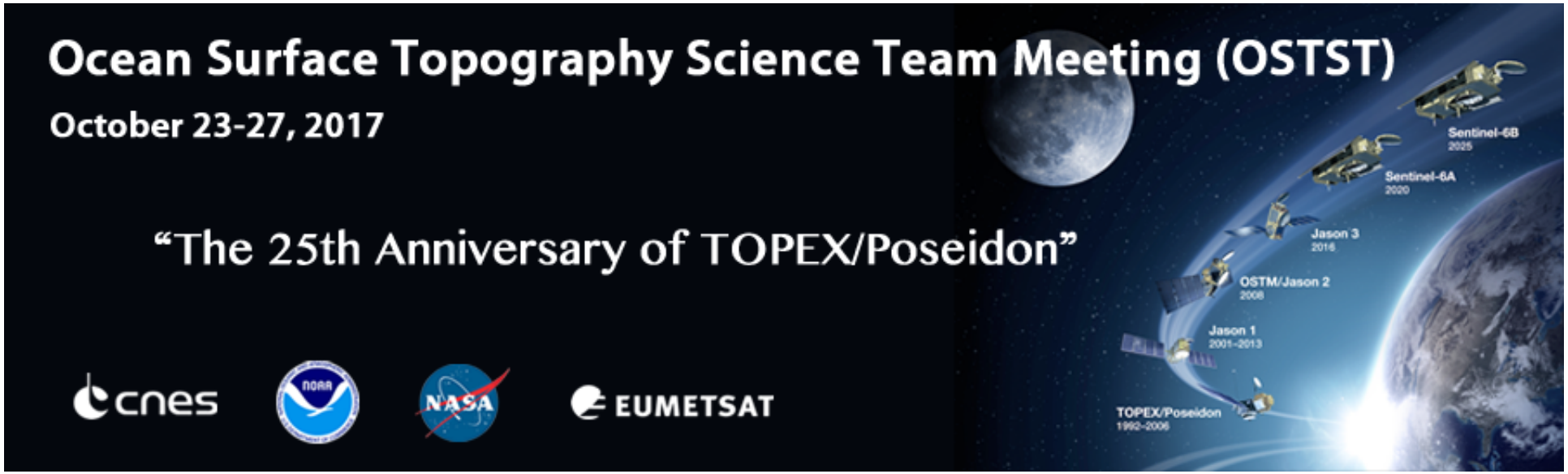


Regional and Global CAL/VAL for Assembling a Climate Data Record

Session chairs: Pascal Bonnefond, Shailen Desai, Bruce Haines, Eric Leuliette, Nicolas Picot

10 orals, 19 posters

Presentations (1)

Regional cal/val

- Results from Harvest, Corsica, Bass Strait, Crete, Lake Issykkul
  - Promising GPS buoy results from Monterey Bay; lidar tide gauge installation at Santa Catalina Island.
  - Buoy reprocessing improved the Bass Strait datum and reduced scatter
  - Jason-3, Sentinel-3A biases are stable; different values among sites (~1 cm, 1σ) **and very close to "zero bias"**
  - **Comparisons with transponder results for Jason-3, Sentinel-3A and CryoSat-2 are coherent at the cm level**

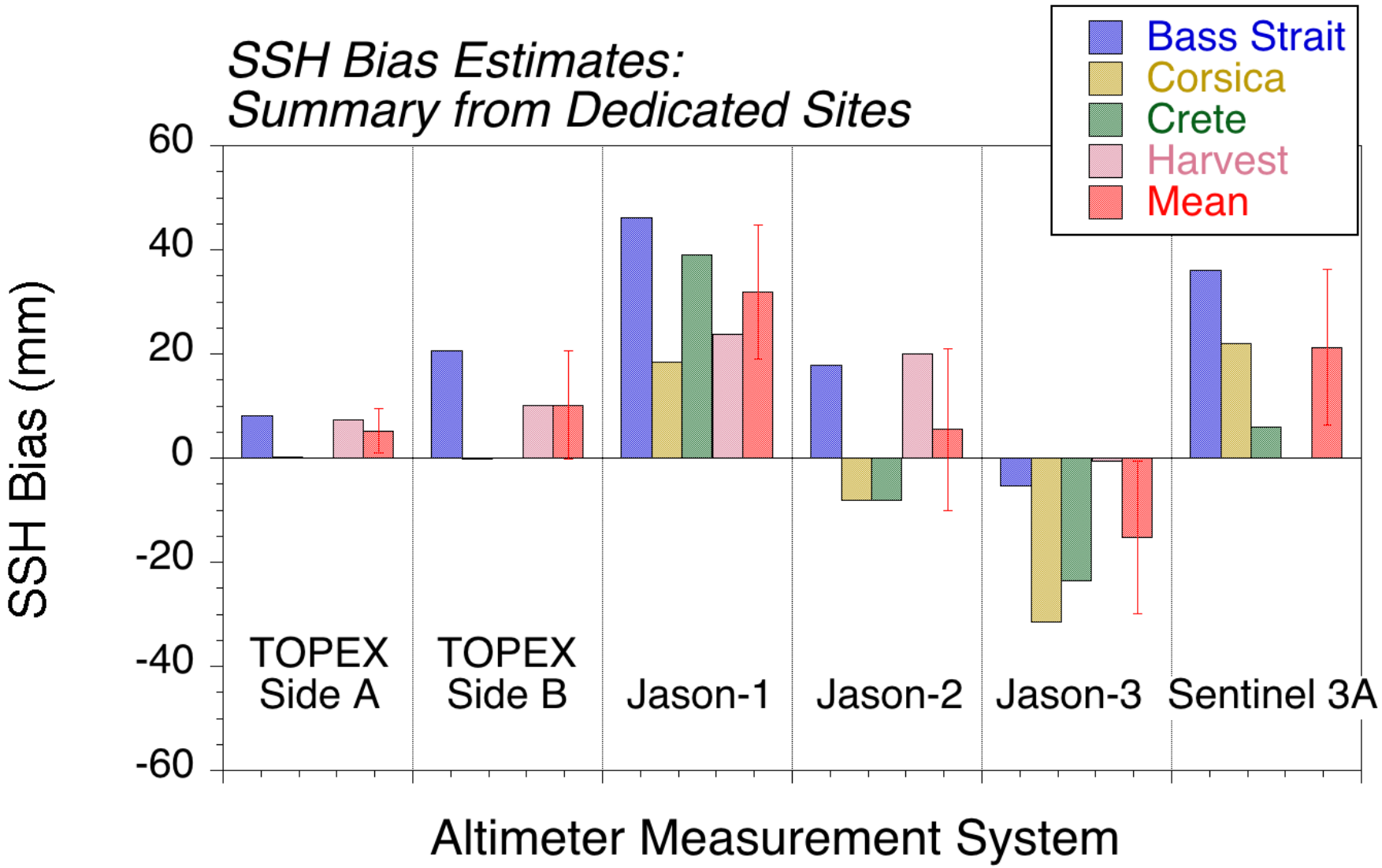
Global cal/val

- Jason-3 quality assessment
  - Excellent performance!
  - 120 days signal appears in crossovers demonstrates correlation between tide models and orbit solutions.
    - 120-day signal appears using GDR orbits with GOT4.8 and FES2014b (different amplitudes), but removed when using JPL orbits with FES2014b.
- Jason-3/Sentinel-3A drifts compared the global tide gauges
  - Jason-3–gauge drift of ±2.3 ± 1.1 mm/year
  - Residuals suggest that the Jason-CS/Sentinel-6 stability requirement can be validated by TGs
- Assessment of Sentinel-3A NTC data quality and SARM performance
  - Current products meet requirements; SWH error reduced, SSH improved in next version (SAMOSA 2.5 retracker)
- Validation of CryoSat Ocean Products
  - Good performance in terms of noise, validate well against TGs and Argo, compares well with Jason

Presentations (2)

Global cal/val continued

- AltiKa drifting phase, HY-2A geodetic phase, and Jason-2 Long-Repeat Orbit
  - Data quality remains excellent
  - For Jason-2 SSH, change of mean sea surface model must be taken into account
- Global validation of subwaveform retracking (ALES) products
  - Improvement in crossovers with ALES applied globally, not just along coasts
- TOPEX Side-A has significant drift.


SSH Bias Estimates:
Summary from Dedicated Sites
Bass Strait
Corsica
Crete
Harvest
Mean
SSH Bias (mm)
60
40
20
0
-20
-40
-60
TOPEX Side A
TOPEX Side B
Jason-1
Jason-2
Jason-3
Sentinel 3A
Altimeter Measurement System

Points discussed at the Cal/Val round table (1)

JCS/S6 Stability requirement

- Recommendation for groups to consolidate methods and results **from** tide gauge comparisons to address whether the gauges can validate the requirements.
- Request that the requirement documents language be clarified and circulated.
- Need for continued studies of systematic errors, particularly vertical land motion.

JCS/S6 Side-B

- Consistent altimeter configuration is ideal for cal/val purposes.
- Preference for long duration Jason-3/JCS-S6 cal/val period given new satellite platform and antenna configuration.

Points discussed at the Cal/Val round table (2)

Dedicated cal/val sites

- Useful for cal/val groups to exchange data to investigate application of differing approaches on observed bias differences at various sites.
- Local conditions and instruments are unique; diversity of techniques should continue to be encouraged
- Guidelines and standards might be useful e.g., experience from ESA Fiducial Measurements could be applied.
- SWOT development highlights science-driven cal/val in addition to requirements-driven cal/val

Absolute cal/val of sigma0

- Tandem cal/val phases are important for relative calibration of sigma0.

Round Robin analysis

- Several new retracking solutions are proposed (ALES, Adaptive, LR-RMC, …). As already performed in the frame of ESA CP40 project, we recommend setting up independent analysis methods to check advantages and drawbacks of all potential algorithms. The procedure should be agreed by all agencies.