

Ocean Surface Topography Science Team Meeting

Venice Convention Centre Palazzo del Casinò

Venice-Lido, Italy

September 27-28, 2012

Thursday, September 27

Room: LA PERLA

8:00 – 9:30 Registration, upload presentations

9:30 – 10:10 Welcoming remarks and program status (Chair: Pascal Bonnefond)

09:30 Meeting overview (Pascal Bonnefond, on behalf of the Project Scientists)

09:40 NASA/CNES/EUMETSAT/NOAA/ESA program status (all Program Managers)

10:10 – 10:40 Jason-1/2/3 Project Status (Chair: Peter Hacker and Juliette Lambin)

10:10 Jason-1 new mission status (G. Shirliffe)

10:20 Jason-2 mission overview and Jason-3 status (T. Guinle & G. Zaouche)

10:40 – 11:30 Discussion points for the splinter sessions (Chair: Josh Willis)

10:40 Remaining geographical or seasonal correlations in the errors (Dorandeu et al.)

10:55 Seamless transition from ocean to coastal retracking algorithms (Quartly, Cipollini et al.)

11:10 Future scientific outlook for Jason-1: geodesy and oceanography (Sandwell, Dibarboue et al.)

11:30 – 12:30 Poster Session (Room: ADRIATICO) - Coffee Break

12:30 – 14:00 LUNCH

14:00 – 15:40 Splinter session I

• **Regional and Global CAL/VAL for Assembling a Climate Data Record (part I)**

Chairs: *Pascal Bonnefond, Shailen Desai, Bruce Haines, Eric Leuliette and Nicolas Picot*

Room: LA PERLA

14:00 Introduction

14:10 [FOAM: From Ocean to inland waters Altimetry Monitoring](#) (Bonnefond et al.)

14:25 [Twenty Years of Altimeter Calibration from an Offshore Platform: An Update from the Harvest Experiment](#) (Haines et al.)

14:40 [Updated Absolute Bias Results from the Australian In-Situ Calibration Sites: Bass Strait and Storm Bay](#) (Watson et al.)

14:55 [Latest results for the determination of absolute bias for Jason-2 and HY-2 satellites using the Gavdos & Crete Cal/Val permanent facilities](#) (Mertikas et al.)

15:10 [Precise Jason-2 absolute altimeter calibration by means of a microwave transponder](#) (Haustleitner et al.)

15:25 [Arctic Ocean Sea-Level Rise](#) (Shum et al.)

• **Tides, internal tides and high-frequency processes**

Chairs: *Florent Lyard, Rui Ponte, Richard Ray*

Room: MOSAICO 1

14:00 [Improving the dynamic atmospheric correction for mean sea level and operational applications of altimetry](#) (Carrere et al.)

14:15 [59-day Oscillations, Beta-prime, S2, and All That](#) (Ray)

14:30 [Evaluation of CTOH new along-track tidal constants database for dealiasing coastal altimetry over the North-West European continental shelf](#) (Roblou et al.)

14:45 [FES 2012: A new tidal model taking advantage of nearly 20 years of altimetry measurements](#) (Carrere et al.)

15:00 [Evaluation of Contemporary Ocean Tide Models](#) (Shum et al.)

15:15 Discussion

• Outreach, Education & Altimetric data services

Chairs: *Vinca Rosmorduc, Margaret Srinivasan*

Room: MOSAICO 2

- 14:00 [ARGONAUTICA, an educational project using JASON data](#) (De Staerke)
- 14:12 [The 7th Continent Expedition : International Student Participation in a Voyage to the "Great Pacific Garbage Patch"](#) (Vernières-Chevalier et al.)
- 14:24 [Education, Outreach, and Societal Benefits of Ocean Altimetry Missions: 20 Years of Communication & Collaboration](#) (Richardson et al.)
- 14:36 [Climate Science Education for Underrepresented Students through Collaboration with CABPES](#) (Hamlington et al.)
- 15:48 [Indonesian Throughflow Proxy from Satellite Altimeters](#) (Susanto et al.)
- 15:00 [Jason-1 Geodetic Datasets at PO.DAAC and the Impact on its Users and Services](#) (Hausman)
- 15:12 SHOWCASE of altimeter outreach (All)

15:40 – 16:10 Coffee Break

16:10 – 18:30 Splinter session II

• Regional and Global CAL/VAL for Assembling a Climate Data Record (part II)

Chairs: *Pascal Bonnefond, Shailen Desai, Bruce Haines, Eric Leuliette and Nicolas Picot*

Room: LA PERLA

- 16:10 [Global Jason-2 Data Quality Assessment including first results of GDR-D reprocessing](#) (Phillips et al.)
- 16:25 [Global Calibration and Validation of the Jason-2 GDR-D Products](#) (Desai et al.)
- 16:40 [Evaluation of Jason-2 GDR-D sea level and retracking parameters](#) (Leuliette et al.)
- 16:55 [Comparing altimetry with Argo and GRACE data for quality assessment and Mean Sea Level studies](#) (Legeais et al.)
- 17:10 [Jason-2 / Envisat Cross-Calibration](#) (Ollivier et al.)
- 17:25 [Reassessment of Jason-2 stability based on revised POD standards](#) (Beckley et al.)
- 17:40 [Global Cal/Val of CryoSat-2 LRM and SAR data over oceans](#) (Scharroo et al.)
- 17:55 [Global Jason-1 Data Quality Assessment on the new geodetic orbit](#) (Phillips et al.)
- 18:10 [HY-2A and DUACS multi-missions products](#) (Legeais et al.)
- 18:25 Short conclusions and introduction to Friday round table

• Near Real Time Products and Applications

Chairs: *Emilie Bronner, Julia Figa Saldana, Gregg Jacobs, John Lillibridge*

Room: MOSAICO 1

- 16:10 NRT session chair poster introduction
- 16:15 [Ssalto/DUACS : Status on the Real Time system upgrades and impact of the altimetry constellation events](#) (Faugere et al.)
- 16:32 [The Use of NRT Altimeter Wind and Wave Products at ECMWF](#) (Abdalla et al.)
- 16:49 [Assimilation of altimeters and ASAR wave data in the wave model MFWAM : preparation study related to CFOSAT mission](#) (Aouf et al.)
- 17:06 [Beyond the sensor, linking the altimeter infrastructure from the antenna to the public](#) (Jacobs et al.)
- 17:23 [Predictability of the Middle Atlantic Bight Shelf Break Front given Satellite Data](#) (Zavala-Garay et al.)
- 17:40 [Application of Near-Real Time Satellite Altimetry for Initializing the Ocean Component of Coupled Tropical Cyclone-Ocean Forecast Models](#) (Yablonsky et al.)
- 17:57 [Assessment of Cryosat near-real-time sea level anomaly data using HF radar and SST imagery](#) (Griffin et al.)
- 18:14 [Could Satellite Altimetry Have Improved Early Detection and Warning of the 2011 Tohoku Tsunami?](#) (Hamlington et al.)

• The Geoid, Mean Sea Surfaces and Mean Dynamic Topography

Chairs: *Ole B. Andersen, Marie-Hélène Rio*

Room: MOSAICO 2

- 16:10 [The geodetic mission phase of Jason-1: Benefits for regional marine gravity field modeling](#) (Dettmering et al.)
- 16:30 [Assessment of the first three generations of GOCE geoid models through their induced surface geostrophic currents](#) (Sanchez-Reales et al.)
- 16:50 [CryoSat-2 SARIN Mesoscale Observations of the Kuroshio Current](#) (Galim et al.)
- 17:10 [Mapping of the Absolute Dynamic Topography from multi-satellite along track Sea Surface Height and GOCE geoid height: a direct method](#) (Mulet et al.)
- 17:30 [Dominance of Eastward Currents in Southern Hemisphere Oceans: the Impact of GOCE Data](#) (Menezes et al.)
- 17:50 [Southern Ocean 4-D circulation: combining altimeter and Argo float data](#) (Zajaczkowski et al.)
- 18:10 [Observing System Evaluation for the Black Sea: Focus on ARGOfloats and altimetry during 2005-2012](#) (Grayek et al.)

18:30 – 19:30 Poster Session Continues (Room: ADRIATICO) & Cocktail

Friday, September 28

9:00 – 10:20 Splinter session III

● Instrument Processing (Part I): Wet and Dry troposphere, Ionosphere and Sea State Bias

Chairs: *Shannon Brown, Estelle Obligis*

Room: **LA PERLA**

- 09:00 Introduction (Overview, Jason-CS Issues, List Posters)
- 09:05 [Impact of GDR D standards on SSB corrections](#) (Tran et al.)
- 09:18 [An improved objective analysis scheme of scanning radiometer measurements to compute the water vapor path delay for altimetry](#) (Stum et al.)
- 09:31 Jason-CS Radiometer Options (and Discussion) (Cullen, Francis, et al.)

● Instrument Processing (Part IIa): LRM/SAR, retracking

Chairs: *François Boy, Phil Callahan, Robert Cullen, Walter Smith*

Room: **LA PERLA**

- 09:45 [Finer, Better, Closer: Advanced capabilities of SAR altimetry in the open ocean and the coastal zone](#) (Gommenginger et al.)
- 09:58 [Development and performances of a numerical method for re-tracking altimeter SAR echoes over open ocean](#) (Moreau et al.)
Combined with: [CryoSat Processing Prototype, LRM and SAR Processing on CNES Side and a Comparison to DUACS SLA](#) (Boy et al.)
- 10:17 [Numerical Solution for the Retracking Algorithm: Performances on Conventional Altimeter Waveforms](#) (Poisson et al.)

● Precision Orbit Determination (Part I)

Chairs: *Luca Cerri, Frank Lemoine*

Room: **MOSAICO 1**

- 09:00 Welcome and Splinter introduction (F. Lemoine, L. Cerri)
- 09:05 [Jason-1 and Jason-2 POD Status](#) (Couhert et al.)
- 09:25 [Improved Orbit Standards for Altimeter Satellite POD at GSFC](#) (Lemoine et al.)
- 09:45 [20-Years of Precision Orbit Determination For Altimetry With GPS](#) (Bertiger et al.)
- 10:05 Posters' authors / Posters presentations (5 minutes each)

● Quantifying Errors and Uncertainties in Altimetry Data (Part I)

Chairs: *Gerald Dibarboure, Joel Dorandeu, Rui Ponte*

Room: **MOSAICO 2**

- 9:00 [Investigating and reducing the differences between the satellite altimetry-based Global Mean Sea Level time series provided by the different processing groups](#) (Cazenave et al.)
- 9:20 [Determining errors in the climate data record](#) (Leuliette et al.)
- 9:40 [Error characterization of the global and regional Mean Sea Level evolution for climate applications.](#) (Ablain et al.)
- 10:00 [Apparent Sea Level Variability and Trends Arising From the Choice of Orbit](#) (Esselborn et al.)

10:20 – 10:50 Coffee Break

10:50 – 12:30 Splinter session IV

• Instrument Processing (Part IIb): LRM/SAR, retracking

Chairs: *François Boy, Phil Callahan, Robert Cullen, Walter Smith*

Room: LA PERLA

- 10:50 Introduction (Overview, Issues)
- 10:55 [A Comparison of Altimeter Noise from Double Retracked Geosat, ERS-1, Envisat, CryoSat and Jason-1 Data](#) (Sandwell et al.)
- 11:09 [Precise Estimates of Ocean Surface Parameters from CryoSat](#) (Giles et al.)
- 11:23 [Pulse-to-pulse correlation in CryoSat SAR echoes from ocean surfaces: implications for optimal pseudo-LRM waveform averaging](#) (Smith et al.)
- 11:37 [An analytical model for Doppler altimetry and its estimation algorithm](#) (Halimi et al.)
- 11:51 [Reaching sub-centimetre range noise on Jason-CS with the Poseidon-4 continuous SAR interleaved mode](#) (Phalippou et al.)
- 12:05 Jason-CS Altimeter Options and Discussion (Cullen, Francis, et al.)
- 12:19 Discussion and Recommendations

• Precision Orbit Determination (Part II)

Chairs: *Luca Cerri, Frank Lemoine*

Room: MOSAICO 1

- 10:50 Posters' authors / Posters presentations (5 minutes each)
- 11:00 [ESOC Integer Ambiguity Resolved Precise and Homogeneous Orbits for Jason-1 and Jason-2](#) (Otten et al.)
- 11:20 [Influence of time varying geopotential models and ITRF realizations on precise orbits of altimetry satellites and derived mean sea level](#) (Rudenko et al.)
- 11:40 [Assessment of Orbit Quality through the SSH calculation](#) (Phillips et al.)
- 12:00 [Reducing the dependency of precise orbits for altimeter missions from the Time Varying Gravity field](#) (Cerri et al.)
- 12:20 Discussion

• Quantifying Errors and Uncertainties in Altimetry Data (Part II)

Chairs: *Gerald Dibarboure, Joel Dorandeu, Rui Ponte*

Room: MOSAICO 2

- 10:50 [Error estimates for a data assimilation system: what modelers really need](#) (Oke et al.)
- 11:10 [Error specification on SLA observations in the Mercator assimilation systems](#) (Remy et al.)
- 11:30 [Altimetry errors in sea surface height at wavelengths less than 100 km](#) (Fu et al.)
- 11:50 [Spatial and temporal characteristics of the errors in Jason-2 and Jason-1 sea surface height measurements](#) (Ponte and Quinn)
- 12:10 [Error Estimation of Altimeter Wind Speed an Significant Wave Height](#) (Abdalla and Janssen)

12:30 – 14:00 LUNCH

14:00 – 15:00 Round tables for each splinter (and OSTST poster session for other participants)

- Regional and Global CAL/VAL for Assembling a Climate Data Record: **Room LA PERLA**
- Precision Orbit Determination: **Room MOSAICO 1**
- Instrument Processing: **Room MOSAICO 2**
- Near Real Time Products and Applications: **Room MANGANO**
- Outreach, Education & Altimetric data services: **Room ROSSI DRAGO**
- The Geoid, Mean Sea Surfaces and Mean Dynamic Topography: **Room MARTINELLI**
- Quantifying Errors and Uncertainties in Altimetry Data: **Room WELLES**
- Tides, internal tides and high-frequency processes: **Room HOFFMANN**

15:00 – 15:30 Coffee Break

Room: LA PERLA

15:30 – 18:00 Summary and recommendations (Chairs: Hans Bonekamp, Pascal Bonnefond, John Lillibridge, Josh Willis)

15:30 Splinter meeting & round tables summaries/recommendations (presented by session chairs)

15:30 Regional and Global CAL/VAL for Assembling a Climate Data Record

15:40 Precision Orbit Determination

15:50 Instrument Processing

16:00 Near Real Time Products and Applications

16:10 Outreach, Education & Altimetric data services

16:20 The Geoid, Mean Sea Surfaces and Mean Dynamic Topography

16:30 Quantifying Errors and Uncertainties in Altimetry Data

16:40 Tides, internal tides and high-frequency processes

16:50 Discussion

17:00 Summary of the 6th Coastal Altimetry Workshop (P. Cipollini)

17:15 GDR Product discussion & recommendations (N. Picot)

17:30 Conclusions and wrap-up (Project Scientists)

18:00 Adjourn

Posters list

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

1	Melachroinos et al.	The effect of geocenter motion on Jason-2 and Jason-1 orbits and the mean sea level
2	Pavlis et al.	Altimeter Calibration and Tectonics Inference Oceanographic Network (ACTION): From OSTM to SWOT
3	Cretaux et al.	Calibration of Envisat radar altimeter over the Lake Issykkul
4	VALLADEAU et al.	Quality assessment of altimeter and tide gauge data for Mean Sea Level and climate studies
5	Boy et al.	POSEIDON3 calibration using a transponder
6	Labroue et al.	Quality assessment of Cryosat-2 data over ocean
7	CALMANT et al.	Altimetry biases in the Amazon basin : the concern of retracking algorithms for non-oceanic calval sites (part of the FOAM project)
8	PHILIPPS et al.	Global Jason–2 Data Analysis of reprocessed Gdr–D products
9	Martinez-Benjamin et al.	Perspectives of a new marine campaign in the western Mediterranean for altimeter calibration
10	Naeije et al.	An update on Cryosat-2 POD and LRM CAL/VAL results
11	Watson et al.	Assessing Altimeter Bias Drift: An Australian Contribution using the Global Tide Gauge Network and GPS Estimates of Vertical Land Motion.
12	Masters et al.	Improving the Sea Level Data Record for Studying Climate Variability
13	Testut et al.	Kerguelen Islands CAL/VAL activities
14	Cancet et al.	Regional CALVAL method in Corsica: validation of the Jason-1, Jason-2 and Envisat missions at non-dedicated sites
15	Bonnefond et al.	Corsica: a multi-mission absolute calibration site
16	Dettmering et al.	Multi-Mission Crossover Analysis: Merging 20 years of altimeter data into one consistent long-term data record

Quantifying Errors and Uncertainties in Altimetry Data

17	BIROL et al.	Using high rate altimeter measurements for coastal studies: example in the NW Mediterranean Sea.
18	PHILIPPS et al.	Jason–2 global error budget for time scales lower than 10 days
19	COSME et al.	Accounting for spatial error correlations in altimetric data assimilation
20	HORVATH et al.	Error Budget Analysis of a Mean Dynamic Topography

The Geoid, Mean Sea Surfaces and Mean Dynamic Topography

21	BOSCH et al.	Error assessment of dynamic ocean topography profiles (iDOT)
22	ALBERTELLA et al.	High resolution dynamic ocean topography in the Southern Ocean from GOCE
23	SCHRÖTER et al.	Evaluating an ensemble of global ocean circulation estimates using satellite altimetry, gravity field models and ARGO data
24	JANJIC et al.	Dynamical ocean topography from satellitemeasurements and its impact on Southern Oceancirculation estimates
25	SANCHEZ-REALES et al.	Anisotropic filtering to improve the geodetic determination of the Surface Geostrophic Currents: Edge Enhancing Diffusion
26	SANCHEZ-REALES et al.	Ocean Geostrophy from Satellite Altimetry and GOCE Data

Instrument processing

27	Fenoglio-Marc et al.	A Study on the Conformance of Altimetry and in-situ Sea Surface Data near coast in the German Bight
28	Amarouche et al.	IMPROVEMENT OF INLAND WATER AREAS ALTIMETER HEIGHT ESTIMATION USING NEW RETRACKING TECHNIQUES
29	Amarouche et al.	Altimeter Mission end-to-end simulators to assess global performance and develop new algorithms for future missions
30	Cipollini et al.	A multi-peak waveform retracker for coastal altimetry
31	NIÑO et al.	Radar waveform inversion: an application to coastal altimetry
32	Emery et al.	Influence of Small Scale Ocean Surface Variations in US West Coast Satellite Altimetry by Comparison with Coincident HF Radar Synthetic Sea Surface Heights
33	OBLIGIS et al.	A specific coastal wet tropospheric correction for the Envisat RA2 altimeter
34	Brown et al.	Development of a 20-year Climate Quality Wet Tropospheric Correction from Altimeter Radiometers
35	Callahan et al.	Reprocessing TOPEX for the Climate Data Record
36	Tseng et al.	Retracking Contaminated Alimetry Waveforms over Coastal and Inland Lake Regions
37	THAO et al.	Trend and Variability of the Atmospheric Water Vapor: a Mean Sea Level Issue
38	Misra et al.	Development of an Enhanced Geophysical Data Record for the TOPEX mission
39	Uematsu et al.	X-band interferometric SAR sensor for the Japanese altimetry mission and aircraft experiment
39B	COTTON et al.	Cryosat Plus For Oceans ? User Consultation

Near Real Time Products and Applications

40	KUMAR et al.	SARAL SCIENCE AND APPLICATIONS PLAN
41	CARTON et al.	Impact of Altimeter sea level on ocean reanalyses at the National Centers for Environmental Prediction
42	MAXIMENKO et al.	Monitoring marine debris from the March 11, 2011 tsunami in Japan with the diagnostic model of surface currents
43	QUILFEN et al.	Observatory and Research on extreme PHEnomena over the Oceans (ORPHEO)
44	BIRKETT et al.	The Near-Real Time Global Reservoir and Lake Monitor
45	LILLIBRIDGE et al.	Near Real-Time Jason-2 Product Operations
46	LEFEVRE et al.	Contribution of the SARAL/Altika mission for sea-state analysis and prediction at mesoscale and in coastal zones
47	ANDRES et al.	JASON-2 GPS BASED OGDR PRODUCTS
48	PUJOL et al.	Ssalto/Duacs: Towards regional products
49	PUJOL et al.	A Kerguelen regional Sea Level product to support the KEOPS2 experiment

Others

50	PASCUAL et al.	Recent advances on mesoscale variability in the Western Mediterranean: complementarity between altimetry and other sensors
51	WENZEL et al.	Reconstruction of global sea level variations from tide gauges and altimetry
52	VOLKOV et al.	Large-scale interannual variability of sea level and water mass properties in the southeast Pacific
53	MAXIMENKO et al.	Beta-plumes and origin of striated patterns in the ocean
54	FENOGLIO-MARC et al.	Decadal Variability of Net Water Flux at the Mediterranean Sea Gibraltar Strait
55	LAZAR et al.	Coastally Trapped Waves Signals and Their Thermal Impacts : Synthesis of Results from Altimetry and Models in the tropical Atlantic
56	FENOGLIO-MARC et al.	SEA LEVEL CHANGE AND VERTICAL MOTION FROM SATELLITE ALTIMETRY, TIDE GAUGES AND GPS IN THE INDONESIAN REGION
57	ZARON et al.	The Wavenumber Spectrum of SSH in the Caribbean Sea
58	QUARTLY et al.	Accuracy requirements for detecting changing trends in sea level
59	KURAGANO et al.	Altimeter's Effect on Global Ocean Heat Content and Mean Surface Dynamic Height Analyzed by the MRI Global Ocean Data Assimilation System
60	D'OVIDIO et al.	Guiding biogeochemical campaigns with high resolution altimetry: waiting for the SWOT mission
61	SASAKI et al.	SSH wavenumber spectra in the North Pacific from a high-resolution realistic simulation
62	TAILLEUX et al.	Rossby wave theories: Where do we stand?
63	HAMLINGTON et al.	Advances in Climate Monitoring Using a Consistent Sea Level Record from 1900 to Present
64	BRASSEUR et al.	Toward the Next Generation of Altimeter Data Assimilation for Physical Ocean and Marine Ecosystem Monitoring and Prediction
65	MORIMOTO et al.	Mean field and annual variation of surface flow in the East China Sea as revealed by combining satellite altimeter and drifter data
66	HAN et al.	Causes for the Indian Ocean Decadal Variability of Sea Level, Thermocline, and Vertical Warming Structure during Recent Decades
67	BALLU et al.	Using radar altimetry, combined with bottom pressure data, to measure underwater vertical movements
68	ARNAULT et al.	Investigation of the interannual variability of the tropical Atlantic Ocean from satellite data
69	SONG et al.	Unexpected Contributions of Satellite Radar Altimetry to Tsunami Research
70	BERON-VERA et al.	Generalized Lagrangian Coherent Structures in altimetry data
71	PENDUFF et al.	Extreme events and statistical structure of sea-level variability: AVISO vs multi-resolution DRAKKAR simulations
72	DAHER et al.	TIDE CONSTITUENTS EXTRACTION BY HARMONIC ANALYSIS USING ALTIMETRIC SATELLITE DATA IN THE BRAZILIAN NORTHERN COAST
73	BLÜTHGEN et al.	Mixing and water mass characteristics off western Greenland from satellite altimetry, hydrodynamic model data and in-situ observations

74	NAKAYAMA et al.	Current status of the Japanese Altimetry Mission
75	KOBAYASHI et al.	Feasibility Study of the Satellite System for the Japanese Future Altimetry Mission
76	ISOGUCHI et al.	Preliminary studies on empirical roll angle error reduction and tidal detection for COMPIRA
77	PIECUCH et al.	On the nature of buoyancy-driven interannual tropical sea level changes
78	ZHANG et al.	The Role of Heating, Winds and Topography on Interannual SeaLevel Changes in the North Atlantic Ocean
79	LEBEN et al.	A 34-Year Historical and Altimetric Perspective of Loop Current Intrusion and Eddy Separation in the Gulf of Mexico
80	KELLY et al.	The Coherence and Impact of Meridional Heat Transport Anomalies in the Atlantic Ocean Inferred from Observations
81	THOMPSON et al.	SEASONAL COUPLING IN THE GULF STREAM REGION BETWEEN THE ATMOSPHERE AND THE OCEAN
82	SMITH et al.	Submesoscale turbulence generated by Charney baroclinicinstability: Implications for inferring subsurface structure from surface observations

Outreach, Education & Altimetric data services

83	BYFIELD et al.	LearnEO!: an ESA Learn Earth Observation Project
84	ROSMORDUC et al.	A new interface to download altimetry data in Toulouse
85	SRINIVASAN et al.	Reaching Operational Users ? A JPL/CCAR collaboration
86	FITZPATRICK et al.	Sea Level Experiments for Climate Science Education of High School Students
87	FLEURY et al.	CTOH: 20 YEARS OF ALTIMETER DATA
88	PUJOL et al.	Ssalto/Duacs: Preparation of the next products version

Precision Orbit Determination

89	Zelensky et al.	Improved Modelling of Time-Variable Gravity for Altimeter Satellite POD
90	Mercier et al.	Recent results in LEO GPS ambiguity fixing at CNES : HY2A and Jason 2
91	Dettmering et al.	Evaluation of new precise orbits of Envisat, ERS-1 and ERS-2 using altimetry
92	Melachroinos et al.	Jason-1 and Jason-2 POD using GPS
93	Grey et al.	Plans and status for UCL non-conservative force models for precise orbit determination in altimetry missions.
94	BIANCALE et al.	On the proper use of the EIGEN-6 models for altimetric orbit computation over decades

Tides, internal tides and high-frequency processes

95	QUINN et al.	How well can we estimate high frequency non-tidal ocean variability for de-aliasing purposes?
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