

# Doppler Oceanography from Space

From science to technology and applications

10 - 12 October 2018 Brest (France)

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## Wednesday 10 October @ Quartz conference center

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08:00 - Registration

09:00

09:00 Welcome (C. Donlon) and practical aspects (C. Peureux)

09:10 **Session 1: Measuring currents from space: principles, achievements and projects – Chair: C. Donlon**

09:10 B. Chapron Remote sensing of surface currents

09:30 R. Romeiser Lessons learned from current measurements with TerraSAR-X and TanDEM-X, 2018 edition

09:50 F. Ardhuin et al. The Sea surface Kinematics Multiscale (SKIM) mission: objectives, status, and ongoing developments.

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10:10 Coffee break

10:30 **Session 1 (continued) – Chair: B. Chapron**

10:30 E. Rodriguez et al. DopplerScatt Results: what we have learned and implications for a winds and currents Mission

10:50 C. Gommenginger et al. SEASTAR: a new mission for high-resolution imaging of ocean surface current and wind vectors from space

11:10 P. Lopez-Dekker et al. Multistatic observations of surface wind and current vectors with the STEREOID mission

11:30 **Session 2: Oceanographic applications 1 – Chair: C. Maes**

11:30 S. Cravatte Needs in near-surface currents observations in the equatorial and tropical oceans

11:50 F. Collard et al. Routine Doppler analysis from Envisat and Sentinel 1 and first oceanographic applications

12:10 A. Rubio Combining land-based HF radar data with in-situ and satellite data for studying coastal mesoscale processes in the south-eastern bay of Biscay

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12:30 Lunch break

13:45 **Discussion – Moderator: C. Donlon**  
How can the different Doppler mission concepts address the needs of the oceanographic community, alone or in synergy with other satellite and in situ sensors and/or numerical models ?

14:20 **Session 3: Oceanographic applications 2 – Chair: J. Gula**

14:20 R. Morrow Observing 2D fine-resolution sea surface height : links to surface currents

14:40 J. Molemaker High resolution ocean surface processes

15:00 J. C. B. da Silva et al. SAR mode altimetry observations of internal solitary waves in the tropical ocean

15:20	J. Johannessen & H. Johnsen	Ice and near-ice applications
15:40	<b>Session 4: Wind, waves, currents: drift and air-sea fluxes – Chair: B. Chapron</b>	
15:40	P. Delandmetter & E. Van Sebille	Which processes control the pathways of floating plastic from Northwestern Europe to the Arctic ?
16:00	Coffee break	
16:20	M. Bourassa et al.	Three-way coupling of surface currents, waves, and wind stress over the Gulf Stream
16:40	F. J. Ocampo-Torres et al.	Direct observations of ocean surface waves and currents within the context of air-sea interaction and momentum transfer
17:00	L. Aouf et al.	Surface currents, key parameter for ocean/waves coupled system of CMEMS
17:20	<b>Discussion – Moderators: M. Bourassa &amp; C. Gommenginger</b> Reviewing science requirements and applications for Doppler satellite missions	
18:00	Adjourn	
19:00	Gala dinner at Oceanopolis 19:00 Bus departure from Quartz 19:30 Oceanopolis – guided tour of aquariums and dinner in Bretagne pavilion 22:30 End and bus return	

## Thursday 11 October @ Pôle Numérique (Plouzané)

08:30	Shuttle departure from train station	
09:00	Welcome coffee	
09:20	<b>Session 5: processing techniques, wave bias and simulations of Doppler signals – Chair: E. de Witte</b>	
09:20	P. Lopez-Dekker	On the retrieval of total surface current using dual-polarized along-track interferometry
09:40	M. van den Oever et al.	StereoSAR total surface current velocity vectors retrieval performance analysis
10:00	P. Hoozeboom, A. Stoffelen & P. Lopez-Dekker	Simulation results on an EPS-SG SCA Doppler mode for ocean current estimation
10:20	Coffee break and poster session	
11:20	<b>Session 6: Doppler from radar back-scatter: simulations and observations – Chair: F. Soulat</b>	
11:20	F. Noguier & P. Dubois	The SKIM “Deep Simulator” and its contribution to the SKIM End to End Performance Simulator (SEEPS)
11:40	Short presentations	
	B. Chapron	Delta-K processing on SKIM: the HF-radar in space
	F. Boy	Analysis of Doppler signals from nadir altimeters
	Discussion	
12:20	Lunch break	
13:20	Coffee and posters	
13:50	<b>Session 7: Calibration and validation of Doppler measurements – Chair: E. Rodriguez</b>	
13:50	A. Martin et al.	SEASTAR : a numerical inversion study of ocean surface wind and current vectors simultaneous retrieval

14:05	N. Gebert et al.	Ocean surface current airborne radar (OSCAR) demonstrator
14:20	J. Horstmann et al.	Observations of Doppler dependencies at X-band
14:40	Y. Yurovsky et al.	Validation of Doppler scatterometer concepts using measurements from the Black Sea Research Platform
15:00	L. Marié	Planning for the November 2018 DRIFT4SKIM experiment
15:20	Coffee break	
15:50	Discussion – Moderators: A. Rubio, E. Rodriguez, L. Marié & S. Cravatte - What are we measuring exactly ? The different flavors of “surface currents” - From dedicated experiments to global observing systems: cal-val plans	
17:00	Adjourn and shuttle to city center	
19:00	Dinner (Aux tours du château, Brest)	

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## Friday 12 October @ Pôle Numérique (Plouzané)

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08:15	Shuttle departure from train station	
08:45	Welcome coffee	
09:00	Session 8: Synergy of sensors and current estimates – Chair: L. Gaultier	
09:00	B. Chapron	Lessons from Globcurrent
09:20	J. Isern-Fontanet et al.	High-resolution surface currents from satellite observations in the North-Western Mediterranean Sea: eddies along the Iberian coast
09:40	Coffee break	
10:10	Session 9: Surface current properties and consequences for inversions from Doppler data – Chair: R. Fablet	
10:10	J. Richman et al.	Comparing High- and low-frequency velocities from state-of-the-art high-resolution global models with moored current meter observations
10:30	D. Menemenlis	Towards improved estimates of upper ocean energetics: Science motivation for the simultaneous measurement of ocean surface vector winds and currents
10:50	C. Ubelmann et al.	Surface current reconstruction combining SKIM and an altimeter constellation
11:10	L. Gaultier	A fast observing system simulator as a tool for discussion between instrument experts and oceanographers: the SKIMulator
11:30	Discussion – Moderators: E. Cosme, C. Ubelmann & R. Fablet Inversion, mapping, assimilation	
12:15	Lunch break	
13:15	Adjourn	
13:30-16:30	Optional : SKIMulator “hands on” training and feedback from users – L. Gaultier (please contact us if interested – limited seats)	

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