



The 8th International Symposium on Gas Transfer at Water Surfaces

17th - 20th May 2022

Plymouth, UK

Programme

Please note: all times shown are in local time (UTC+1)

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Tues 17th May	Speaker	Title	Presentation will be given online/in person
08:30 - 09:30		Arrival, registration and coffee	
	Session 1: Chair: Phil Nightingale		
09:30: Intro & Welcome	Phil / Icarus	Welcome to PML from organisers and PML Chief Exec.	
09:50	Mingxi Yang	Global synthesis of air-sea CO ₂ transfer velocity estimates from ship-based eddy covariance measurements	In person
10:10	Herlina Herlina	Simulation of high-intensity isotropic turbulence driven gas transfer	In person
10:30	John Prytherch	Wind and fetch dependent gas transfer velocity in an Arctic sea-ice lead determined from eddy covariance CO ₂ flux measurements	In person
10:50	Kerstin Krall	Sufficiently Realistic Simulation of Oceanic Conditions for Air-Sea Gas Exchange at the Re-Engineered Heidelberg Aeolotron	In person
11:10 Coffee 30 mins			
	Session 2: Chair: Rik Wanninkhof		
11:40	Helen Czerski	Bubble size distributions measured in high wind conditions, and their potential contribution to oxygen uptake during winter storms	In person
12:00	Andrew Watson	New, substantially larger, estimates of global air-sea CO ₂ flux from surface data	In person
12:20	Ryo Dobashi	Air-sea gas exchange in a seagrass ecosystem	In person
12:40	Alison Brown	Greenhouse gases in the urban Clyde estuary: Physical estuarine processes and nutrient loading impact greenhouse gas generation	In person
Poster setup and Lunch 13:00 - 14:00			
	Session 3 (Hybrid): Chairs: Lisa Miller & Tom Bell		
14:00 Keynote	Christa Marandino	Concurrent, open ocean eddy covariance flux measurements of dimethylsulfide and carbon dioxide: What have they taught us about gas transfer and what should we do next?	Online
14:30	Adrian Callaghan	Energy dissipation-based estimates of whitecap coverage and air entrainment rates in whitecaps	Online
14:50	Chris Chickadel	The Thermal Signature of the Residual Foam in Breaking Waves	Online
15:10	Mariana Ribas Ribas	pCO ₂ gradient in the near surface ocean	Online
15:30 Coffee 30 mins			
	Session 4 (Hybrid): Chairs: Herlina Herlina & Jamie Shutler		
16:00	David Ho	Relationship between wind speed and gas exchange in the coastal Baltic Sea	Online
16:20	Sudheesh Valliyodan	Greenhouse gases (CO ₂ , CH ₄ and N ₂ O) emissions from a tropical micro-tidal estuary (Cochin, India)	In person
16:40	Henry Potter	A Field Experiment to Determine the Impact of Nearshore Processes on Air-Sea Mass, Momentum, and Heat Fluxes	Online
17:00 - 17:30	Discussion Session	How to cross-link lab and field measurements?	
		In person chair: Kerstin Krall, aided by Phil Nightingale	
		Online Chairs: Christa Marandino and Bernd Jähne (virtual)	
Icebreaker 17:30 - 19:00 and posters			
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Wed 18th May	Speaker	Title	Presentation will be given online/in person
Session 5: Chair: Herlina Herlina			
09:00 Invited	Leonie Esters	The effect of non-local processes on eddy covariance air-lake gas fluxes	In person
09:20	Katherine Adler	Laboratory investigation of significant gas transfer enhancement via capillary-gravity bow waves	In person
09:40	Anna Rutgersson	Using land-based stations for air-sea interaction studies, issues with land influence and non-stationarity	In person
10:00	Philipp Voigt	A thermographic approach to measure the wind shear stress at the water surface	In person
10:20	Emily Matthews	Airborne observations over the North Atlantic Ocean reveal urea is a missing component of atmospheric reduced nitrogen	In person
10:40 Coffee 30 mins			
Session 6: Chair: Anna Rutgersson			
11:10	Daniel Ruth	Bubble break-up and the formation of sub-Hinze scale bubbles in turbulence	In person
11:30	Theresa Barthelmeß	Seasonal and Diurnal Variations in Organic Matter Composition Influence the Biogenic Surfactant Pool in the Coastal Baltic Sea	In person
11:50	Aki Vähä	Greenhouse gas fluxes over a boreal river measured with eddy covariance	In person
12:10	Erni Murniati	Measurements of surface-cooling induced gas-transfer using fluorescence-lifetime imaging (FLI) technique	In person
Posters and Lunch 12:30 - 14:00			
Session 7 (Hybrid): Chairs: Rachel Stanley & Frances Hopkins			
14:00 Keynote	Lucy Carpenter	The role of chemistry in air-sea fluxes	In person
14:30	Konstantinos Chasapis	Bubble size distributions in spilling breakers with different phase shifts	In person
14:50	Avanti Acharya	Influence of carbonate chemistry on mangrove-dominated estuarine system and carbon dioxide fluxes in Indian Sunderban	Online
15:10	Brian Haus	Laboratory measurements of size-dependent spray distributions above both fresh and seawater.	Online
15:30 Coffee 30 mins			
Session 8 (Hybrid): Chairs: Chris Zappa & Phil Nightingale			
16:00	Daniel Phillips	Air-sea exchange of acetaldehyde, acetone and DMS at a UK coastal site	Online
16:40 - 16:50	Rik Wanninkhof	Global estimates of air-sea CO ₂ fluxes: Contributions of Wallace Broecker and Taro Takahashi	In person
17:00 - 18:00			
		GTWS Scientific Steering Committee meeting in Board Room (SSC members only)	
Approx. 19:00			
		Conference Dinner @ National Marine Aquarium www.national-aquarium.co.uk , Rope Walk, Coxsides, Plymouth, PL4 0LF	

Thurs 19th May	Speaker	Title	Presentation will be given online/in person
Session 9: Chair: Rachel Stanley			
09:20 Invited	Luc Deike	Understanding and modeling bubble mediated gas transfer by breaking waves	In person
09:40	Richard Sims	Quantifying the decadal and global scale impact of tropical cyclones on the ocean carbon sink using remote sensing, in situ and models	In person
10:00	Sevda Norouzi Alibabalou	Constraining the role of the surface micro layer in tropical riverine headwaters of Amazonia	In person
10:20	Ian Ashton	Comparing in-situ and earth-observation derived CO ₂ fluxes to assess uncertainties in global estimates	In person
10:40 Coffee 30 mins			
Session 10: Chair: Chris Zappa			
11:10	Tetsu Hara	Air-sea scalar transfer - effects of wind and waves on equivalent roughness length	In person
11:30	Jan Wissink	The effects of surfactants on air-water gas transfer	In person
11:50	Alexia Saint-Macary	Testing and application of a diffusion-based method for sampling DMS in the Sea Surface Microlayer	In person
12:10	Yuanxu Dong	Near-surface stratification biases the Arctic and global air-sea CO ₂ flux estimates	In person
Posters and Lunch 12:30 - 14:00			
Session 11 (Hybrid): Chairs: Anna Rutgersson & Jamie Shutler			
14:00 Keynote	Sally MacIntyre	Near-surface Turbulence in Arctic, Temperate, and Tropical Inland Waters: Implications for Gas Fluxes	Online
14:30	Nathan Laxague	Observations of mean and wave orbital flows in the upper centimeters of the ocean surface layer	Online
14:50	Andy Jessup	IRISS, an IR Radiometer System for Measurement of Skin Temperature from USVs and Buoys	Online
15:10	Meng Lu	Working Towards Improved Gas Transfer Prediction by Understanding the Impact of Gustiness on Momentum Fluxes	Online
Coffee 30 mins			
Session 12 (Hybrid): Chairs: Rik Wanninkhof & Tom Bell			
16:00	Alex Soloviev	Modeling Air-Sea Gas Transfer Under Tropical Cyclone Conditions	In person
16:20	Bernd Jähne	On the Limitations of Current Field Measuring Techniques and Measurements for Air-Sea Gas Exchange	Online
16:40	Peter Liss	CLAW: Dead or Alive?	In person
17:00 - 17:30	Discussion Session	Topic TBC	
		In person chair: TBC, aided by Frances Hopkins	

Friday 20th May	Speaker	Title	Presentation will be given online/in person
Session 13: Chair: Mingxi Yang			
09:00 Keynote	David Woolf	The peculiar characteristics of air-water gas transfer	In person
09:30	Rachel Stanley	Air-sea gas exchange fluxes and steady state saturation anomalies at very high wind speeds, as revealed by noble gases	In person
09:50	Andrew Smith	On the parameterisation of air-sea gas transfer of CO ₂ via wave breaking energy dissipation rate	In person
10:10	Charel Wohl	Sea ice concentration impacts dissolved organic gases in the Canadian Arctic	In person
10:30	Joe Peach	Statistical distributions of whitecap variables using a novel remote sensing technique to detect and track individual whitecaps in digital sea surface images	In person
10:50 Coffees 30 mins			
Session 14: Chair: Lisa Miller			
11:20	Jamie Shutler	Evidence that differences between the dominant drivers of surface air-sea exchange and those of surface cross-shelf transport are controlling continental shelf-sea carbon sinks	In person
11:40	Lucia Gutierrez-Loza	Controls of air-sea CO ₂ exchange under high and low wind-speed conditions	In person
12:00	Chris Zappa	Using Ship-Deployed High-Endurance Unmanned Aerial Vehicles for the Study of Ocean Surface and Atmospheric Boundary Layer Processes	In person
12:20	Tom Bell	Relationships between CO ₂ gas transfer velocity, radar backscatter and wave properties	In person
12:40	Tom Bell	Wrap up, student presentation prize and photo montage	
Lunch 13:00 - 14:00			
Packed Lunch Option			