

		session	presenter	topic
Monday	9:00-9:10	Introduction	Pierre-Philippe Mathieu and ESRIN staff	Welcome and logistical information
	9:10-9:30	2. Challenges	Sarah Gille	Goals for the workshop (As informed by the challenges for Southern Ocean research identified by the US CLIVAR Working Group on High-Latitude Surface Fluxes)
	9:30-9:50	1. Applications	Veronica Tamsitt	Air-sea heat flux and the upper ocean heat budget in the Southern Ocean State Estimate
	9:50-10:10	1. Applications	Andrew Lenton	Sampling requirements to constrain Southern Ocean CO2 Sea-Air fluxes.
	10:10-10:30	1. Applications	John Fyfe	Comparing trends in the Southern Annular Mode and surface westerly jet
	10:30-10:50	1. Applications	Bruno Delille	Air-sea ice exchange: update of recent findings, outcomes from sea ice models, caveats and open questions
	10:50-11:20	coffee break		
	11:20-11:40	2. Challenges	Simon Josey	Southern ocean air-sea fluxes : An overview and new insights from the Southern Ocean Flux Station
	11:40-12:00	discussion: applications and challenges		
	12:00-12:20	3a. New technology (in situ)	Jim Edson	Direct Measurements of Air-Sea Fluxes from Ships & Surface Moorings: Methodology and Their Current and Future Use in Marine Boundary Layer Studies
	12:20-12:40	3a. New technology (in situ)	Eric Schulz	Sustained Southern Ocean air-sea flux mooring observations: past and future challenges
	12:40-13:00	3a. New technology (in situ)	Luc Lenain	Instrumented Autonomous Surface Vehicles for Air-Sea Interaction Research
	13:00-14:00	lunch		
	14:00-14:20	3a. New technology (in situ)	Ken Melville	Airborne Measurements of Air-Sea Fluxes
	14:20-14:40	3a. New technology (in situ)	Alexandra Weiss	Airborne observations of atmospheric boundary layer fluxes in the Antarctic Sea ice zone
	14:40-15:00	3b. New technology (remote sensing)	Marcos Portabella	Mesoscale Convective System wind variability as depicted by satellite scatterometers: a valuable source of air-sea interaction information
	15:00-15:20	3b. New technology (remote sensing)	Gary Wick	turbulent fluxes
	15:20-15:50	coffee break		
	15:50-16:10	3b. New technology (remote sensing)	Brent Roberts	Recent advances, remaining challenges, and new approaches toward the development of climate-quality turbulent flux records
	16:10-16:30	3b. New technology (remote sensing)	Hiroyuki Tomita	Japanese Ocean Flux Data Sets with Use of Remote Sensing Observations version 3 (J-OFURO3): capabilities in the Southern Ocean
	16:30-16:50	discussion: How should we advance new and emerging technologies?		
	16:50-17:30	posters		2-minute 1-slide poster summary presentations (TBC, depending on numbers)
	17:30-18:30	cocktail hour and posters		
	poster	1. Applications	Sarah Gille	Upper ocean heat balance in the Southern Ocean
	poster	1. Applications	Ivana Cerovecki	The Subantarctic Mode Water distribution and properties in the Southern Ocean State Estimate
	poster	1. Applications	Essowe Panassa	Response of Southern Ocean Mixed Layer and Chlorophyll to the Southern Annular Mode over the period 1990-2012 from Observations
	poster	1. Applications	N. Anilkumar	Freshening of Antarctic Bottom Water in the Indian Ocean Sector of the Southern Ocean
	poster	1. Applications	Luciano Ponzi Pezzi	Marine Atmospheric Boundary Layer and air-sea fluxes measurements along the Southwestern Atlantic and the Southern Oceans

	poster	2. Challenges	Jiping Liu	Intercomparisons of Air-Sea Heat Fluxes over the Southern Ocean
	poster	2. Challenges	Noele Franchi Leonardo	Radiative Fluxes in Southern Hemisphere
	poster	2. Challenges	Seb Swart	Initial comparison between Southern Ocean in situ air-sea heat flux observations and satellite-based products
	poster	3a. New technology (in situ)	Sarat Chandra Tripathy	Deep chlorophyll maximum and primary productivity in Indian Ocean sector of the Southern Ocean: Case study in the Subtropical and Polar Front during austral summer 2011
	poster	3a. New technology (in situ)	Inga J. Smith	Vertical heat flux measurements for Antarctic land-fast sea ice during winter
	poster	3a. New technology (in situ)	Luke Gregor	Spatio – temporal optimisation of CO2 float measurements in the Southern Ocean
	poster	3a. New technology (in situ)	Ronald Buss de Souza	Ocean-atmosphere and land-atmosphere fluxes at Deception Island, Antarctica
	poster	3c. New technology (assimilation/modeling)	Clothilde Langlais	Sea-air CO2 fluxes and their relationship with ventilation and reventilation in the Southern Ocean
	poster	3c. New technology (assimilation/modeling)	Judith Hauck	Rising atmospheric CO2 leads to large impact of biology on Southern Ocean CO2 uptake via changes of the Revelle factor
Tuesday	9:00-9:20	3a. New technology (in situ)	Margaret Yelland	Air-sea turbulent fluxes of momentum, sensible and latent heat and gases: parameterisation uncertainties and direct flux measurements.
	9:20-9:40	3a. New technology (in situ)	Chris Fairall	Parameterization and Measurement of Surface Turbulent Fluxes at High Latitudes
	9:40-10:00	3a. New technology (in situ)	Scott Miller	Automated underway eddy covariance system for air-sea momentum, heat and CO2 fluxes in the Southern Ocean
	10:00-10:20	3a. New technology (in situ)	Ben Moat	Airflow modelling for ships operating in the Southern Ocean
	10:20-10:40	discussion/synthesis: What can we now do in		
	10:40-11:00	coffee break		
	11:00-11:20	3c. New technology (assimilation/modeling)	Patrick Heimbach	Inferring air-sea fluxes through dynamically consistent ocean state estimation
	11:20-11:40	3c. New technology (assimilation/modeling)	Matt Mazloff	Constraining the Southern Ocean air-sea CO2 fluxes
	11:40-12:00	3c. New technology (assimilation/modeling)	Pat Hyder	Assessing and applying a new methodology to estimate surface heat fluxes
	12:00-12:20	3c. New technology (assimilation/modeling)	Julien Nicolas	Status update on the performance of global atmospheric reanalyses over the Southern Ocean
	12:20-12:40	3c. New technology (assimilation/modeling)	Dorothee C. E. Bakker	Global synthesis products enable quantification of the ocean carbon sink and ocean acidification
	12:40-13:00	discussion: What are priorities for modeling a		
	13:00-14:00	lunch		
	14:00-14:20	4. ECVs/EOVs	Abderrahim Bentamy	flux products
	14:20-14:40	4. ECVs/EOVs	Mark Bourassa	Requirements: essential climate variables and essential ocean variables
	14:40-15:00	4. ECVs/EOVs	Carol Anne Clayson	WDAC and air-sea flux requirements
	15:00-15:30	discussion: EOVs and air-sea fluxes. What a		
	15:30-16:00	coffee break		
	16:00-17:30	break-out groups		
		- candidate flux EOVs and identified way forward		
		- Ideas for pilot study, including potential funding, links to YOPP etc		

		- identification of existing capabilities, observing system requirements, technological issues etc, towards development of international multi-disciplinary strategy for Southern Ocean air-sea observations		
	evening	no-host conference dinner, arrangements TBD		
Wednesday	9:00-9:20	4. ECVs/EOVs	Seb Swart	SOOS Working Group structure, EOVs from SOOS
	9:20-10:00	break-out group reports		
	10:00-10:20	coffee break		
	10:20-11:20	cross-cutting break outs: connecting pilot stu		
	11:20-12:30	synthesis discussion, wrap up, conclusions, recommendations, formation of air-sea flux capability group		
		action: white paper on pilot project		
		action: white paper on EOV/ECV flux requirements		
		action: workshop reports: to funders, to EOS		