

Carbon Assimilation Workshop Program

Monday May 15, 2017

Faculty Club, 41 Willcocks Street

University of Toronto

Version 2.3

08:30	Continental breakfast and Registration	
09:00	Welcome	Dylan/Saroja
Session chair: Ray Nassar		
09:10	The effects of disturbance on landscape change and ecosystem carbon fluxes across Canada's north	Merritt Turetsky, <i>Invited</i>
09:50	An update on the development of Canada's National Forest Carbon Monitoring, Accounting and Reporting System	Werner Kurz
10:10	Diagnostic assessment of the impacts of CO ₂ fertilization and other factors on the global carbon cycle	Jing Chen
10:30	Coffee break (20 min)	
Session chair: Feng Deng		
10:50	Satellite observations reveal nitrogen limitation of terrestrial carbon cycle in response to CO ₂ fertilization	Liming He
11:10	Impact of representing photosynthesis on land data assimilation and on numerical weather prediction	Stephane Belair
11:30	Seasonal carbon uptake at tropical forests across the Amazon basin: integrating biometric and eddy covariance measurements and land surface models	Natalia Restrepo-Coupe
11:50	Atmospheric CO ₂ and 13C/12C seasonality responses to recent changes in vegetation phenology	Alemu Gonsamo
12:10	Lunch break (60 min)	
Session chair: Douglas Chan		
13:10	Mysteries of the global methane budget	Lori Bruhwiler, <i>Invited</i>
13:50	ECCC's GHG Observational Program. Summary of progress to 2016	Doug Worthy
14:10	Inverse modelling of anthropogenic CH ₄ emissions in Alberta and Saskatchewan: update and insights	Elton Chan
14:30	Methane emissions from the Canadian energy sector: Lessons from extensive ground campaigns	Dave Risk
14:50	Determining and attributing methane emissions from the Los Angeles megacity	Debra Wunch
15:10	Coffee break (20 min)	
Session chair: Dylan Jones		
15:30	Improving livestock methane emission inventories using CrIS ammonia and SCIAMACHY CH ₄	Chris Sioris
15:50	Methane Leak Detection technology	Kuldeep Prasad
16:10	Advances in urban GHG monitoring in the Paris test-bed region and the Recife (Brazil) demonstrator experiment	Felix Vogel

16:30	High-resolution quantification of CO ₂ emissions in the Greater Toronto Area	Stephanie Pugliese
16:50	Quantifying power plant CO ₂ emissions with OCO-2 observations and potential capabilities from future Canadian and international missions	Ray Nassar
17:10	Discussion 1: Monitoring of anthropogenic emissions	
17:30	Adjourn	
18:30	Group Dinner (at own expense)	

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Tuesday May 16, 2017

08:30	Continental breakfast	
Session chair: Dylan Jones		
09:00	What do column CO ₂ measurements from OCO-2 tell us about the global carbon cycle?	David Baker, <i>Invited</i>
09:40	Quantifying regional CO ₂ fluxes using the GEOS-Chem 4D-Var data assimilation system	Feng Deng
10:00	Vertical propagation of the CO ₂ flux signal	Saroja Polavarapu
10:20	Coffee break (30 min)	
Session chair: Saroja Polavarapu		
10:50	Progress towards making CH ₄ concentration a prognostic variable in Canadian Earth System Modelling framework	Vivek Arora
11:10	Limitations of coarse resolution chemistry transport models and their impact on top-down CH ₄ surface emissions estimates	Ilya Stanevich
11:30	Development of an operational global CO ₂ flux estimation system with a coupled meteorological and tracer transport model: A status report	Vikram Khade
11:50	New capability of EC-CAS forward model for regional greenhouse gas simulation	Jinwoong Kim
12:10	Lunch break (60 min)	
Session chair: Ray Nassar		
13:10	Including soil carbon in a comparison of simple models to predict soil moisture in dry soils	Hida Manns
13:30	Satellite-derived leaf chlorophyll content as a proxy for photosynthetic capacity in GPP modelling	Holly Croft
13:50	Combining SIF and XCO ₂ observations to constrain GPP and respiration over boreal ecosystems	Brendan Byrne
14:10	Remote Sensing Measurements of CO ₂ at High Latitudes	Joseph Mendonca
14:30	GFIT2: CO ₂ profile retrievals	Sebastien Roche
14:50	Coffee break (30 min)	
Session chair: Saroja Polavarapu		
15:20	Extending EC-CAS to simulate atmospheric CO	Dylan Jones

15:40	GEOS-Chem simulations of greenhouse gas measurements (CO ₂ , CH ₄ , and CO) from moving platforms in and around Australia	Beata Bukosa
16:00	Global CO emission estimates using multiple species data assimilation	Xuesong Zhang
16:20	Discussion 2: How can we improve flux estimation accuracy and retrieve finer scales?	
16:40	Wrap up discussion	
16:50	Adjourn	

Discussion topics

Discussion 1: What do we need to be able to monitor or regulate oil/gas or other anthropogenic emissions?

Discussion 2: How can we improve flux estimation accuracy and retrieve finer scales? What is the benefit of EnKF versus 4Dvar?