



**TransCom Meeting 2012**

# **Meeting Agenda**

**4-8 June 2012**

**NANJING, CHINA**

<b>Sunday 3 June (1<sup>st</sup> day)</b>			
14:00-18:00	Registration		
<b>18:00</b>	<b>Supper</b>		
<b>Monday 4 June (2<sup>nd</sup> day)</b>			
<b>08:00 - 12:10</b>			
<b>Session 1: Progress and Synthesis of inversion results</b>			
<b>(15 minutes for each presentation, and 5 minutes for questions, same thereafter)</b>			
<b>Chair: Prof. Philippe Peylin</b>			
08:00-08:20	Andrew R. Jacobson, David F. Baker, Stephan R. Kawa, et al.	University of Colorado, USA	Lessons learned from a multi-model CarbonTracker exercise
08:20-08:40	Jonathan Fung , Jing Chen, Feng Deng, et al.	University of Toronto, Canada	The effect of spatial distributions of US crop production and consumption on the inverted global and regional CO <sub>2</sub> surface flux
08:40-09:00	Fei Jiang, Hengmao Wang, Jing Chen, et al.	Nanjing University, China	Nested Atmospheric Inversion for the Terrestrial Carbon Sources and Sinks in China
09:00-09:20	Ann Stavert, R. Law and M. van der Schoot	Centre for Australian Weather and Climate Research, Australia	Southern Ocean CO <sub>2</sub> sink project: Measurements, forward modelling and inversions
09:20-09:40	Ray Nassar, Louis Napier-Linton, Kevin R. Gurney, et al.	Environment Canada, Canada	Improving the temporal and spatial distribution of CO <sub>2</sub> emissions from global fossil fuel emission inventories for source/sink inversions
<b>09:40-10:00</b>	<b>Tea break</b>		
<b>Chair: Prof. Andy Jacobson</b>			
10:00-10:20	Peylin Philippe, Gurney Kevin, Law Rachel, et al.	Metro-France	Global Atmospheric Carbon Budget: Synthesis from an ensemble of atmospheric CO <sub>2</sub> inversions
10:20-10:40	Huilin Chen, Stephen A. Montzka, Arlyn E. Andrews, et al.	NOAA ESRL, USA	Estimating North America carbon fluxes through Lagrangian inverse modeling for CO <sub>2</sub> and COS
10:40-12:10	Discussion		
<b>12:10</b>	<b>Buffet Lunch</b>		

**14:00 - 18:30**

**Session 2: Advances in constraining the surface CO<sub>2</sub> balance using optimization techniques**

**Chair: Prof. Wouter Peters**

14:00-14:20	Peylin Philippe, Kane Abdou, Rayner Peter	Metro-France	New estimates of air-sea CO <sub>2</sub> exchange or the past two decades, from a statistical ocean model using pCO <sub>2</sub> measurements and MERCATOR re-analysis
14:20-14:40	Christian Rodenbeck	Max Planck Institute for Biogeochemistry, Germany	Combining Oceanic pCO <sub>2</sub> And Atmospheric CO <sub>2</sub> and O <sub>2</sub> Data To Estimate Ocean Biogeochemistry
14:40-15:00	Nicholas C. Parazoo	Jet Propulsion Laboratory, USA	Observed Constraints on Amazon Carbon Balance During 2010 Drought
15:00-15:20	Ivar van der Velde Lin Wu, Wouter Peters, Kevin Schaefer, et al.	Wageningen University and Research Center, The Netherlands	Using 13CO <sub>2</sub> as an extra carbon balance constraint in CarbonTracker
15:20-15:40	Jing Chen	Nanjing University, China	Atmospheric inversion of global surface CO <sub>2</sub> flux with <sup>13</sup> C constraint
<b>15:40-16:00</b>	<b>Tea break</b>		
<b>Chair: Prof. Yong Li</b>			
16:00-16:20	Wouter Peters, Ivar van der Velde, Michiel van der Molen, et al.	Wageningen University and Research Center, The Netherlands	Towards gridded CarbonTracker estimates
16:20-16:40	Takashi MAKI	Meteorological Research Institute, Japan	Carbon cycle analysis system using real observation data and LETKF
16:40-17:00	Tilo Ziehn, M. Scholze W. Knorr, et al.	Centre for Australian Weather and Climate Research, Australia	Comparison of Monte Carlo and adjoint inversion techniques to derive posterior parameter uncertainties in terrestrial ecosystem models
17:00-17:20	Lin Wu, Marc Bocquet, Frédéric Chevallier, et al.	Laboratoire des Sciences du Climat et de l'Environnement, France	On Uncertainty Quantification in CO <sub>2</sub> Flux Inversion
17:20-18:30	Discussion		
<b>18:30</b>	<b>Welcome Banquet</b>		

<b>Tuesday 5 June (3<sup>rd</sup> day)</b>			
<b>08:00 – 12:00</b>			
<b>Session 3: Evaluation of model transport and surface fluxes using upper-air observations</b>			
<b>Chair: Prof. Prabir Patra</b>			
08:00-08:20	Andrew R. Jacobson, Yehui Zhang, David F. Baker, et al.	University of Colorado, USA	Planetary boundary layer mixing heights from radiosonde data compared with model simulations
08:20-08:40	Anna Agusti-Panareda, Prabir Patra, Sander Houwelling	European Centre for Medium range Weather Forecasts, UK	Comparing the IFS with other models in the TransCom-CH <sub>4</sub> experiment
08:40-09:00	Robin Locatelli, A. Fortems-Cheiney, P. Bousquet, et al.	Laboratoire des Sciences du Climat et de l'Environnement, France	Impact of transport errors on the estimation of methane sources and sinks by inverse modeling
09:00-09:20	Yosuke Niwa, Toshinobu Machida, Yousuke Sawa, et al.	Meteorological Research Institute, Japan	Atmospheric CO <sub>2</sub> inversion for 2006–2008 using CONTRAIL data
<b>09:20-09:40</b>	<b>Tea break</b>		
<b>Chair: Prof. Prabir Patra</b>			
09:40-10:00	Prabir Patra	Research Institute for Global Change, JAMSTEC, Japan	Use of multi-tracers simulations for characterizing transport model simulations
10:00-12:00	Discussion	New TransCom experiments: 2009-2011	
<b>12:00</b>	<b>Buffet Lunch</b>		

<b>14:00 - 12:10</b>			
<b>Session 4: Satellite column CO<sub>2</sub> data inversion and flux inversion</b>			
<b>Chair: Prof. Sander Houweling</b>			
14:00-14:20	Tatsuya Yokota	National Institute for Environmental Studies, Japan	GOSAT latest xCO <sub>2</sub> and XCH <sub>4</sub> data quality
14:20-14:40	Friedemann Reum, Julia Marshall, and Christian Roedenbeck	Max Planck Institute for Biogeochemistry, Germany	GOSAT data compared with and used in TM3 inversions

14:40-15:00	Shamil Maksyutov, H. Takagi, Y. Yoshida, et al.	National Institute for Environmental Studies, Japan	Inverse modelling of the regional CO <sub>2</sub> fluxes with NIES GOSAT SWIR L2 XCO <sub>2</sub> retrieval products
15:00-15:20	Tomohiro Oda, David F. Baker, Chris O'Dell, et al.	Colorado State University, USA	4D-Var assimilation of ACOS GOSAT CO <sub>2</sub> data using multiple prior fields
<b>15:20-15:40</b>	<b>Tea break</b>		
<b>Chair: Prof. Frederic Chevallier</b>			
15:40-16:00	Sourish Basu, Sander Houweling, Sandrine Guerlet, et al.	SRON Netherland Institute for Space Research	Global CO <sub>2</sub> flux inversion :: TM5 transport model + GOSAT L2 CO <sub>2</sub>
16:00-16:20	Hengmao Wang, Fei Jiang, Jing Chen, et al.	Nanjing University, China	Optimization of The Terrestrial Carbon Flux with GOSAT Observations
16:20-16:40	Feng Deng, Dylan B. A. Jones, Daven Henze, et al.	University of Toronto, Canada	Quantifying sources and sinks of atmospheric CO <sub>2</sub> using GOSAT and surface flask observations
16:40-18:10	Discussion		
<b>18:10</b>	<b>Buffet Dinner</b>		

<b>Wednesday 6 June (4<sup>th</sup> day)</b>			
<b>08:00 - 12:00</b>			
<b>Session 5: Inversion of CH<sub>4</sub>, N<sub>2</sub>O and CO</b>			
<b>Chair: Prof. Lori Bruhwiler</b>			
08:00-08:20	Kentaro Ishijima, Prabir K. Patra, Eri Saikawa, et al.	Research Institute for Global Change, JAMSTEC, Japan	Seasonal cycle of nitrous oxide: Implications of transport and emission seasonality
08:20-08:40	Rona Thompson, P. Patra, K. Ishijima, et al.	Laboratoire des Sciences du Climat et l'Environnement, France	TransCom N <sub>2</sub> O Experiment Results
08:40-09:00	Rachel Law, Z. M. Loh, K. D. Haynes, et al.	Centre for Australian Weather and Climate Research, Australia	Methane simulations at Cape Grim to assess methane flux estimates for south east Australia
09:00-09:20	Discussion		

<b>09:20-09:40</b>	<b>Tea break</b>		
<b>Chair: Rachel Law</b>			
09:40-10:00	Martin Keller, Dylan B. A. Jones*, Daven Henze, et al.	University of Toronto, Canada	Using a Weak-constraint 4D-Var Approach to Estimate Model Transport Errors in the Assimilation of CO Observations From MOPITT
10:00-10:20	Kazutaka Yamada, Hiroshi Koide, Masamichi Nakamura, et al.	Japan Meteorological Agency, Japan	Greenhouse gas monitoring and analyzing activities in Japan Meteorological Agency
10:20-12:00	Discussion		
<b>12:20</b>	<b>Buffet Lunch</b>		

**14:00 - 18:10**

**Session 6: Inversion and data assimilation techniques**

**Chair: Prof. Xiaogu Zheng**

14:00-14:20	Lori Bruhwiler, Ed Dlugokencky and Colm Sweeney	NOAA ESRL, USA	A Multi-Model Approach for Estimation of Arctic Greenhouse Gas Budgets
14:20-14:40	Xiaogu Zheng	Beijing Normal University, China	A New Structure of Error Covariance Matrices in EnKF Assimilation
14:40-15:00	Guocan Wu	Beijing Normal University, China	Ensemble Transform Kalman Filter with Nonlinear Observational Operator
15:00-15:20	Qiang Liu, Aijun Ding, et al.	Nanjing University, China	An application of inverse modeling on carbon flux in east Asia: preliminary results

**15:20-15:40** **Tea break**

**Chair: Prof. Dylan Jones**

15:40-16:00	Yao Sheng, Yong Li, et al.	Beijing Normal University, China	The Sensitivity analysis of Restriction Equations Deviation
16:00-16:20	Qing Huang, Yong Li, et al.	Beijing Normal University, China	Estimation of Carbon Flux Product Bias at Regional scale by using linear regression model
16:20-16:40	Shanshan Han, Yong Li, et al.	Beijing Normal University, China	The study of time windows inversion system

16:40-18:10	Discussion
<b>18:10</b>	<b>Buffet Supper</b>

### Thursday 7 June (5<sup>th</sup> day)

**08:00 – 12:00**

#### **Session 7: GHG measurement programs and their applications**

**Chair: Prof. Lingxi Zhou and Yosuke Niwa**

08:00-08:20	Lingxi Zhou	Chinese Academy of Meteorological Sciences (CAMS), China	High accuracy measurement of atmospheric GHGs & tracers at the Chinese background stations and relevant applications
08:20-08:40	Yosuke Sawa, Toshinobu Machida, Hidekazu Matsueda, et al.	Meteorological Research Institute, Japan	Outline of CONTRAIL Project - Observation of Atmospheric GHGs by Passenger Aircraft
08:40-09:00	Haikun Wang	Nanjing University, China	High resolution CO <sub>2</sub> emission inventories of energy consumptions and industrial processes in China
09:00-09:20	Shuangxi Fang, Lingxi Zhou, Lixin Liu, et al.	Chinese Academy of Meteorological Sciences (CAMS), China	Observation of atmospheric CH <sub>4</sub> /CO <sub>2</sub> mixing ratios from different height by Cavity Ring Down Spectroscopy system
09:20-09:40	Bo Yao, Huang Jianqin, Zhou Lingxi, et al.	Chinese Academy of Meteorological Sciences (CAMS), China	Preparation method of mixed standards for high accuracy CO <sub>2</sub> /CH <sub>4</sub> /CO measurement
<b>09:40-10:00</b>	<b>Tea break</b>		

#### **Session 8: New developments of global carbon assimilation systems**

**Chair: Prof. Saroja Polavarapu and Ray Nassar**

10:00-10:20	Bakr Badawy, C. Rödenbeck, M. Heimann, et al.	Max-Planck-Institute for Biogeochemistry, Germany	Quantifying Carbon Processes of the Terrestrial Biosphere in a Global Atmospheric Inversion
10:20-10:40	Saroja Polavarapu, M. Neish, S. Ren, et al.	Environment Canada, Canada	Development of the Environment Canada Carbon Assimilation System

10:40-11:00	ChunHo Cho, Kyungna Kim, Andrew R. Jacobson, et al.	KMA National Institute of Meteorological Research, Korea	CarbonTracker-Asia: Results 2000-2009
11:00-11:20	Heng Zheng, Yong Li, et al.	Beijing Normal University, China	A Global Carbon Assimilation System to Estimate CO <sub>2</sub> surface fluxes
11:20-11:40	Huifang Zhang, Baozhang Chen, et al.	Institute of Geographic Sciences and Natural Resources Research, CAS, China	Exchange of net terrestrial carbon dioxide in Asia
11:40-12:00	Discussion		
<b>12:00</b>	<b>Buffet Lunch</b>		

<b>14:00 - 17:40</b>			
<b>Session 9: Transport modeling</b>			
<b>Chair: Prof. Aijun Ding and Lujun Zhang</b>			
14:00-14:20	Dmitry Belikov, Shamil Maksyutov and TransCom-CH4 community	National Institute for Environmental Studies, Japan	TransCom model simulations of <sup>222</sup> Rn: evaluation and intercomparison of cloud convective transport
14:20-14:40	Srabanti Ballav, P. K. Patra, M. Takigawa, et al.	Jadavpur University, India	Inter comparison of annual time series and diurnal cycle of CO <sub>2</sub> output in TransCom and WRF-CO <sub>2</sub> models
14:40-15:00	Lujun Zhang, Tao Feng, et al.	Nanjing University, China	Analysis of the concurrent variation between subtropical jet and latitudinal gradient of atmospheric CO <sub>2</sub>
15:00-15:20	Lixin Liu, Lingxi Zhou, Lingjun Xia	Chinese Academy of Meteorological Sciences (CAMS), China	Background variations of atmospheric carbon dioxide and its stable carbon isotopes at WLG and SDZ station
<b>15:20-15:40</b>	<b>Tea break</b>		
15:40-16:00	Xingqin An, Yanli Cheng, Fanghua Yun, et al.	Chinese Academy of Meteorological Sciences (CAMS), China	Simulation of CO <sub>2</sub> Variation of China Atmospheric Background Stations in Recent 10 Years – Application of Carbon Tracker Model
16:00-16:20	Tao Feng, Lujun	Nanjing University,	Analysis of the CO <sub>2</sub> simulation



	Zhang, et al.	China	differences with the GEOS-Chem model driven by GEOS-4 and GEOS-5 meteorology
16:20-16:40	Anna Agusti-Panareda	European Centre for Medium range Weather Forecasts, UK	Re-scaling CO <sub>2</sub> Natural Fluxes over Land to Constraint the Global Annual Budget of CO <sub>2</sub> In Forward Modeling
16:40-17:00	Baozhang Chen	Institute of Geographic Sciences and Natural Resources Research, CAS, China	Carbon sources/sinks distribution at regional scales using biosphere ecological models
17:00-17:30	Discussion		
<b>18:00</b>	<b>Buffet Supper</b>		

<b>Friday 8 June (6<sup>th</sup> day)</b>	
08:30-17:30	Sightseeing
<b>17:30</b>	<b>Farewell Dinner</b>

**Notes :**

Breakfast location : Rose Garden

Dinner location : Jasper Hall

Buffet Lunch & Supper location : Rose Garden

Meeting Room : Lilac

**Meeting affairs group:**

Qin Wang: +86-25-83597077; FeiJiang: +86-13913839705; Hengmao Wang: +86-15105144669;

**Hotel:** International Conference Hotel of Nanjing 南京国际会议大酒店

**Address:** No. 2 Sifangcheng ZhongShanLing Nanjing, China.

**Postcode:** 210000 **Tel:** +86-25-84430888 **Fax:** +86-25-84432990