

## Monday, 07 October 2013

8:30 AM	Opening Remarks	Laura Furgione (NWS Deputy Director) and Bill Lapenta (EMC Director)
Session 1	Chair: Andrew Lorenc	Methodology
9:00 AM	Mike Fisher	Invited Talk - Methodology
9:30 AM	Gerald Desroziers	4D-En-Var: link with weak-constraint 4D-Var and different possible implementations
9:45 AM	Chengsi Liu	A Unified Framework for Four-Dimensional Ensemble-Variational Hybrid Data Assimilation
10:00 AM	Milija Zupanski	A Hybrid Variational-Ensemble Data Assimilation Method with an Implicit Optimal Hessian Preconditioning
<b>10:15 AM</b>	<b>1.25 hours</b>	<b>Coffee/Posters</b>
Session 2	Chair: Andrew Lorenc	Methodology
11:45 AM	James Purser	A New Observation Error Probability Model for Nonlinear Variational Quality Control and Applications within NCEP Gridpoint Statistical Interpolation
12:00 PM	Sammy Metref	Non-Gaussian Ensemble Data Assimilation using a Deterministic Approach
12:15 PM	Peter Jan van Leeuwen	Particle Filters for Numerical Weather Forecasting
<b>12:30 PM</b>	<b>1 hour</b>	<b>Lunch</b>
Session 3	Chair: Andrew Lorenc	Methodology
1:30 PM	Jeff Anderson	Invited Talk - Highly-Scalable Algorithms for Ensemble Data Assimilation
2:00 PM	Francois-Xavier Le Dimet	Posterior Covariance and Analysis Error Covariance in Variational Data Assimilation
2:15 PM	Christian Keppenne	Ensemble Data Assimilation without Ensembles with Application to Ocean Data Assimilation
2:30 PM	Marc Bocquet	An Iterative Ensemble Kalman Smoother
2:45 PM	John Harlim	The role of additive and multiplicative noise in filtering complex dynamical systems
3:00 PM	Lili Lei	Validation of a New Algorithm for Empirical Localization of Observations for Ensemble Kalman Filter Data Assimilation in Global Atmospheric Models
<b>3:15 PM</b>	<b>1 hour</b>	<b>Afternoon Break/Posters</b>
Session 4	Chair: Roger Saunders	Constituent DA
4:15 PM	Arlindo DaSilva	Invited Talk- Constituent Assimilation
4:45 PM	Bruce Ingleby	Operational Assimilation of Dust Optical Depth
5:00 PM	Richard Menard	Comparison of EnsKF and 4DVar chemical data assimilation with the BASCOE system
5:15 PM	Humberto Godinez	Data Assimilation for Space Weather: Specification of the Ionosphere-Thermosphere Environment
<b>5:30 PM</b>		<b>End</b>
<b>6:30 PM</b>		<b>Ice Breaker at Greenbelt Marriott</b>

## Tuesday, 08 October 2013

Session 5	Chair: Tom Hamill	Global/Regional Atmospheric DA
9:00 AM	Jeff Whitaker	Invited Talk: Representing model uncertainty in data assimilation with stochastic physics
9:30 AM	Lars Isaksen	The ECMWF Hybrid 4D-Var and Ensemble of Data Assimilations
9:45 AM	Mark Buehner	Four-Dimensional Ensemble-Variational Data Assimilation for Global Deterministic Weather Prediction
10:00 AM	Daryl Kleist	4D-Ensemble-Var for the deterministic NCEP GFS: Dual resolution sensitivity experiments with real observations
<b>10:15 AM</b>	<b>1.25 hours</b>	<b>Coffee/Posters</b>
Session 6	Chair: Tom Hamill	Global/Regional Atmospheric DA
11:30 AM	Yannick Tremolet	Towards a Longer Assimilation Window in the IFS 4D-Var
11:45 AM	Gil Compo	Developing the 20th Century Reanalysis version 3 (1850-2013)
12:00 PM	Paul Poli	Specification of Background Errors in the ECMWF 20th Century Reanalysis Using Surface-Only Observations (ERA-20C)
12:15 PM	Shinya Kobayashi	Japanese 55-year Reanalysis (JRA-55): status and plans
<b>12:30 PM</b>	<b>1 hour</b>	<b>Lunch</b>
Session 7	Chair: Tijana Janic Pfander	Combined: Global/Regional Atmospheric & Convective Scale DA
1:30 PM	Takemasa Miyoshi	Invited Talk: Exploring Multi-scale and Model-error Treatments in Ensemble Data Assimilation
2:00 PM	Tom Auligne	Improved Initialization and Prediction of Clouds in Numerical Weather Prediction
2:15 PM	Dale Barker	Invited Talk: Convective Scale DA
2:45 PM	Ming Xue	A Regional GSI-Based Coupled EnKF-3DnVAR Hybrid Data Assimilation System for the Operational Rapid Refresh Forecasting System
3:00 PM	Kazumasa Aonashi	Dual Scale Neighboring Ensemble Approach for the Cloud-Resolving Model Ensemble Variational Assimilation
<b>3:15 PM</b>	<b>1 hour</b>	<b>Afternoon Break/Posters</b>
Session 8	Chair: Tijana Janic Pfander	Convective Scale DA
4:15 PM	Heiner Lange	On the Benefits of a High-Resolution Analysis for Convective Data Assimilation of Radar Observations using a Local Ensemble Kalman Filter
4:30 PM	Chris Snyder	Data Assimilation for Flows which Possess Many Scales of Motion
4:45 PM	Montmerle Thibaut	Invited Talk: Forecast errors at convective scale
5:15 PM	Derek Posselt	On the Use of Data Assimilation Methodologies for Examining Cloud System - Environment Interactions
5:30 PM	Nancy Nichols	Correlated Observation Errors in High Resolution Data Assimilation
<b>5:45 PM</b>		<b>End</b>

## Wednesday, 09 October 2013

<b>Session 9</b>	<b>Chair: Anthony Weaver</b>	<b>Global/Regional Oceanic DA</b>
9:00 AM	James Cummings	Invited Talk: Ocean DA
9:30 AM	Ganesh Gopalakrishnan	Comparison of 4DVAR and EnKF state estimates and forecasts in the Gulf of Mexico
9:45 AM	Changxiang Yan	Ocean Data Assimilation in the Indian and Pacific Oceans
10:00 AM	Laurent Parent	Global Eddy-permitting ocean reanalysis and simulations of the period 1992 to present
<b>10:15 AM</b>	<b>1.25 hours</b>	<b>Coffee/Posters</b>
<b>Session 10</b>	<b>Chair: Anthony Weaver</b>	<b>Combined: Global/Regional Oceanic &amp; Coupled DA</b>
11:30 AM	Hajoon Song	Coupled 4D-variational physical and biological data assimilation in the California Current System
11:45 AM	Dick Dee	Invited Talk: Coupled DA
12:15 PM	Eric de Boisseson	CERA:The ECMWF Coupled Data Assimilation System
<b>12:30 PM</b>	<b>1 hour</b>	<b>Lunch</b>
<b>Session 11</b>	<b>Chair: Saroja Polavarapu</b>	<b>Combined: Coupled &amp; Land Surface DA</b>
1:30 PM	Isabelle Mirouze	The Met Office Weakly-Coupled Atmosphere/Land/Ocean/Sea-Ice Data Assimilation System
1:45 PM	Abhishek Chatterjee	Evaluating the Fidelity of a Community Coupled Ocean-Atmosphere Data Assimilation System
2:00 PM	Nobumasa Komori	Development of an Ensemble-based Data Assimilation System with a Coupled Atmosphere–Ocean GCM
2:15 PM	Shaoqing Zhang	The Energy Balance in Climate Estimation by Combining Data with a Biased Coupled Model
2:30 PM	Patricia deRosnay	Invited Talk: Land Surface Data Assimilation for Numerical Weather Prediction
3:00 PM	Bernard Bilodeau	Towards the Operational Implementation of the Canadian Land Data Assimilation System
<b>3:15 PM</b>	<b>1 hour</b>	<b>Afternoon Break/Posters</b>
<b>Session 12</b>	<b>Chair: Rolf Reichle</b>	<b>Land Surface DA</b>
4:15 PM	Wade Crow	The Auto-tuned Land Data Assimilation System (ATLAS)
4:30 PM	Sujay Kumar	Assimilation of remotely sensed hydrological datasets in the North American Land Data Assimilation System (NLDAS)
4:45 PM	Liugi Renzullo	Satellite Soil Moisture Data Assimilation into the Australian Water Resources Assessment modeling system
5:00 PM	Clara Draper	Assimilation of Geostationary Satellite Land Surface Skin Temperature Observations into the GEOS-5 Global Atmospheric Modeling and Assimilation System
5:15 PM	Martin Vejmelka	Data Assimilation for Fuel Moisture in WRF-SFIRE: Method and Implementation
<b>5:30 PM</b>		<b>End</b>
<b>6:30 PM</b>		<b>Conference Dinner at University of Maryland</b>

## Thursday, 10 October 2013

<b>Session 13</b>	<b>Chair: Stefan Klink</b>	<b>Satellite, In Situ, and Radar DA</b>
9:00 AM	Lars-Peter Riishojgaard	Invited Talk: Assimilation of Obs
9:30 AM	Lidia Cucurull	Improving the Assimilation of GPS Radio Occultation Observations in the Lower Troposphere
9:45 AM	Jing Cheng	Assimilation of Attenuated Reflectivity Data from X-band Network Radars Using Ensemble Kalman Filter
10:00 AM	Marta Janiskova	Experimental Assimilation of Spaceborne Cloud Radar and Lidar Observations at ECMWF
<b>10:15 AM</b>	<b>1.25 hours</b>	<b>Coffee/Posters</b>
<b>Session 14</b>	<b>Chair: Stefan Klink</b>	<b>Satellite, In Situ, and Radar DA</b>
11:30 AM	Michael Rennie	Preparations for Aeolus Doppler Wind Lidar data and the expected NWP Impact
11:45 AM	Stefano Migliorini	Efficient Exploitation of the Information Content of Cloud-Affected IASI Radiances using an Ensemble of Data Assimilations
12:00 PM	Peter Weston	Accounting for Correlated Observation Errors in the Assimilation of High Resolution Sounders
12:15 PM	Sara Zhang	Precipitation-related radiance bias correction and how GPM can help
<b>12:30 PM</b>	<b>1 hour</b>	<b>Lunch</b>
<b>Session 15</b>	<b>Chair: Andrew Collard</b>	<b>Satellite, In Situ, and Radar DA</b>
1:30 PM	Vincent Guidard	The Concordiasi Campaign over Antarctica: Inter-model Monitoring and Impact on the Assimilation.
1:45 PM	Kristi Salonen	AMVs – how to make better use of them in NWP?
2:00 PM	Peter Lean	Using Simulated Atmospheric Motion Vector Wind Retrievals from NWP Radiances to Characterize Height Assignment Errors
2:15 PM		
2:30 PM	William McCarty	The Assimilation of Cloud-Affected Infrared Radiances at the Global Modeling and Assimilation Office
2:45 PM	Vijay Tallapagada	Assimilation of Aircraft Reconnaissance Data within the NCEP operational HWRP Regional One-Way Hybrid Data Assimilation System
<b>3:00 PM</b>	<b>1 hour</b>	<b>Afternoon Break/Posters</b>
<b>Session 16</b>	<b>Chair: Andrew Collard</b>	<b>Combined: Atmospheric, Convective, &amp; Satellite, In Situ, and Radar DA</b>
4:00 PM	Wan-shu Wu	Structure and phase error correction of the first guess with hybrid 3DV-ensemble analysis
4:15 PM	Carlos Geijo	Assimilation of Radar Data in a Convection Permitting Operational NWP System Using the Field Alignment Technique
4:30 PM	Xuguang Wang	A Comparison of GSI-based EnKF and 3DVar for Multi-scale Data Assimilation and Prediction of the Genesis of an MCS over the Continental US
4:45 PM	Eric Wattrelot	Optimization of the operational assimilation of radar data at convective scale in AROME France and international cooperations
5:00 PM	Glen Romine	Improving Convective Forecast Skill via Ensemble Data Assimilation with WRF-DART
5:15 PM	Tadashi Fujita	Development of the Operational Data Assimilation System for Rapid and Frequent Updates of Forecast with the Convection-Permitting Model at JMA
<b>5:30 PM</b>		<b>End</b>

## Friday, 11 October 2013

<b>Session 17</b>	<b>Chair: Ron Gelaro</b>	<b>DA Diagnostics</b>
9:00 AM	Ron Errico	Invited Talk: Development, Validation, and Applications of OSSEs at NASA's Global Modeling and Assimilation Office
9:30 AM	Carla Cardinali	Impact on the Use of Different Error Objective Function on the Forecast Sensitivity to Observation Diagnostic Tool
9:45 AM	Dacian Daescu	Adjoint Estimation of the Forecast Impact of Observation Error Correlations Derived from A Posteriori Covariance Diagnosis
<b>10:00 AM</b>	<b>0.5 hours</b>	<b>Coffee Break</b>
<b>Session 18</b>	<b>Chair: Ron Gelaro</b>	<b>DA Diagnostics</b>
10:30 AM	Andrew Lorenc	Ensemble-Variational Data Assimilation Methods – Modelling and Diagnosis of Localized Covariances
10:45 AM	Yann Michel	A posteriori diagnostics in an ensemble of variational assimilations
11:00 AM	Eugenia Kalnay	Ensemble Forecast Sensitivity to Observations: Applications for Proactive Quality Control
11:15 AM	Rahul Majahan	Observation Impact on Forecasts for lead-times beyond 24 hours
11:30 AM	Theme Chairs	Summary of key issues from each theme
<b>12:30 PM</b>		<b>Symposium End</b>

## ORAL PRESENTATION BACKUPS

BACKUP Atmosphere	Xuguang Wang	GSI-based Four-dimensional Ensemble-variational (4DEnsVar) Data Assimilation for NCEP Global Forecast System: Single Resolution Experiments with Real Data
BACKUP Land	Rihab Mechri	Surface Temperature Downscaling based on Genetic Particle Smoother
BACKUP Diagnostic	Pierre Brousseau	A Posteriori Diagnostics of the Impact of Observations on the AROME-France Convective-Scale Data-Assimilation System