

6th International Symposium on Data Assimilation

Munich, 5 – 9 March 2018

Program

(last update 1 March 2018)

Monday, 5 March

09:00 – 10:20	Registration & Coffee
10:20 – 10:40	Welcome

Radar data assimilation and nowcasting

10:40 – 11:20	X. Wang: Development and research of GSI-based EnVar for convective-scale radar data assimilation: challenges and recent progress [keynote]
11:20 – 11:40	A. De Lozar, A. Seifert, U. Blahak: Direct assimilation of 3D radar reflectivities with an ensemble-based data assimilation system
11:40 – 12:00	C. Liu, R. Kong, M. Xue: Direct variational assimilation of radar reflectivity and radial velocity data: issues with non-linear reflectivity operator and solutions

Lunch

13:00 – 13:20	Y. Ikuta: Assimilation of GPM/DPR in km-scale Hybrid-4DVar system
13:20 – 13:40	E. Bauernschubert, K. Stephan, C. Schraff, H. Reich, U. Blahak, R. Potthast: Towards the assimilation of radial winds in an ensemble Kalman filter on the convective scale
13:40 – 14:00	S. Yokota, H. Seko, M. Kunii, H. Yamauchi, E. Sato: State-dependent additive covariance inflation for radar reflectivity assimilation
14:00 – 14:20	X. Yang: Construction of an ensemble nowcasting with use of overlapping assimilation windows

14:20 – 14:50	Introduction posters part 1 (1 min per poster)
14:50 – 16:20	Posters & Coffee

Representation of model error and parameter estimation

16:20 – 17:00	M. Pulido: Parameter estimation beyond the augmented state approach: expectation-maximization algorithm [keynote]
17:00 – 17:20	D. Kleist: The use of stochastic physics in operational global data assimilation with NGGPS-FV3GFS
17:20 – 17:40	Y. Ruckstuhl, T. Janjic: Joint parameter and state estimation with ensemble Kalman filter based algorithms for convective-scale applications
17:40 – 18:00	M. Tsyrlunikov, D. Gayfulin: A Bayesian approach to non-Gaussian model error modeling
18:00 – 18:20	J. Farnan, E. V. Hólm, H. Lawrence, N. Bormann, P. Laloyaux, C. Lupu: Diagnosing weak-constraint model error forcing and variational bias correction interaction in the ECMWF assimilation system
18:20 – 20:00	Icebreaker

Tuesday, 6 March

Convective-scale data assimilation

09:00 – 09:40	N. Gustafsson: Data assimilation for convective-scale numerical weather prediction [keynote]
09:40 – 10:00	C. Schraff, H. Reich, A. Rhodin, R. Potthast, K. Stephan: On the operational use of the Kilometre-scale Ensemble Data Assimilation (KENDA) at DWD
10:00 – 10:20	J. Schrötle, M. Weissmann, L. Scheck, A. Hutt: Assimilation of cloud-affected radiances in idealized simulations of deep convection

Coffee

Advances in methodology and non-Gaussian approaches

11:00 – 11:20	M. Bonavita, E. Holm, P. Lean: non-linear, non-Gaussian effects in the ECMWF 4D-Var
11:20 – 11:40	G. Inverarity, N. Bowler, A. Clayton, M. Jardak, M. Wlasak, L. Anton, A. Lorenc: Improving the MOGREPS global ensemble using 4D-ensemble variational data assimilation
11:40 – 12:00	C. Thomas, R. Mahajan, D. Kleist, F. Yang: Advances in cloud and water vapor analysis within NGGPS-FV3GFS

Lunch

13:00 – 13:20	P. J. Leeuwen: The accuracy of efficient particle filters
13:20 – 13:40	A. Walter, R. Potthast, A. Rhodin: On Localized Particle Filters for the Global Weather Prediction Model ICON
13:40 – 14:00	F. R. Pinheiro, P. J. Leeuwen, G. Geppert: Nonlinear data assimilation using synchronisation in a particle filter
14:00 – 14:20	L. Nerger: A Hybrid Kalman-Nonlinear Ensemble Transform Filter
14:20 – 16:00	Posters & Coffee

Observation impact and observing strategies

16:00 – 16:40	R. Todling: Insight and evidence motivating the simplification of dual-analysis hybrid systems into single-analysis hybrid systems [keynote]
16:40 – 17:00	T. Necker, M. Weissmann, S. Geiss, T. Miyoshi: Observations in convective-scale ensemble data assimilation: actual and potential impact
17:00 – 17:20	H. Chipilski, X. Wang, D. Parsons: Impact of assimilating multi-scale PECAN field campaign observations on the numerical prediction of bores and bore-initiated convection
17:20 – 17:40	M. Schindler, M. Weissmann, A. Schäfler, G. Radnoti: The downstream impact of dropsonde and extra radiosonde observations conducted during the NAWDEX field campaign in 2016
17:40 – 18:00	O. Stiller: Observation impact diagnostics in an ensemble data assimilation system

Wednesday, 7 March

Convective-scale data assimilation

09:00 – 09:20	G. Craig, T. Selz: Mesoscale dynamical regimes and balance in convective-scale DA
09:20 – 09:40	M. Milan, B. Macpherson, G. Dow, G. Inverarity, R. Tubbs, M. Wlasak: The Met Office hourly 4D-Var system, status and plans
09:40 – 10:00	T. Kawabata, G. Ueno: Development of a storm-scale particle filter for investigating predictability of convection initiation and development
10:00 – 10:20	E. H. Kim, E. Lee, S. Lee, Y. H. Lee: Data assimilation of GNSS Zenith Total Delays in KMA convective scale model

Coffee

11:00 – 11:20	T. Miyoshi, J. Ruiz, G. Y. Lien, T. Teramura, Y. Maejima, K. Kondo, H. Sakamoto: Is 30-second update fast enough for convection-resolving data assimilation?
11:20 – 11:40	Y. Zeng, T. Janic, A. Lozar, U. Blahak, M. Sommer, H. Reich: Representation of model error in convective scale data assimilation
11:40 – 12:00	D. Leuenberger, A. Haefele: Assimilation of temperature and humidity profiles from a Raman Lidar

Lunch

Data assimilation for land-surface processes and coupled models

13:00 – 13:40	P. Browne, P. Rosnay, H. Zhu: Coupled earth system assimilation in NWP at ECMWF [keynote]
13:40 – 14:00	H.-J. Hendricks-Franssen, P. Shrestha, W. Kurtz, B. Naz, H. Zhang, S. Kollet, C. Simmer, H. Vereecken: Coupled data assimilation with TerrSysMP
14:00 – 14:20	C. Sgoff, A. Schomburg, J. Schmidli: Assimilation of land surface temperature in the coupled land atmosphere system
14:20 – 14:50	Introduction posters part 2 (1 min per poster)
14:50 – 16:20	Posters & Coffee

16:20 – 16:40	P. Ferrante, F. Marucci, L. Torrisi, V. Cardinali: Use of satellite soil moisture information for Nowcasting – short range NWP forecasts
16:40 – 17:00	A. S. Lawless, P. J. Smith, N. K. Nichols: Treating sample covariances for use in strongly coupled atmosphere-ocean data assimilation
17:00 – 19:00	Munich Tour
19:00 – 22:00	Dinner

Thursday, 8 March

Ensemble forecasting and predictability

09:00 – 09:20	C. Schwartz, G. Romine, K. Fossell: How does covariance inflation impact EnKF-initialized convection-allowing ensemble forecasts?
09:20 – 09:40	K. Bachmann, C. Keil: Predictability of deep convection in idealized experiments with radar data assimilation
09:40 – 10:00	J. Keller, C. Figura, A. Hense: Ensemble initial conditions targeted at the convective scale
10:00 – 10:20	M. Savli , N. Zagar, J. L. Anderson: Assimilation of horizontal line-of-sight winds with a mesoscale EnKF data assimilation system over the northern Atlantic and Europe

Coffee

Advances in methodology and non-Gaussian approaches

11:00 – 11:20	J. Anderson: Exploiting nonlinear relations between observations and state variables in Ensemble Kalman filters
11:20 – 11:40	S. Flechter, A. Kliwer, A. Jones, J. Forsythe: Mixed Gaussian-Lognormal Based Variational Data Assimilation
11:40 – 12:00	T. Janjic, Y. Zeng, Y. Ruckstuhl: Preservation of physical properties with Ensemble-type Kalman Filter Algorithms

Lunch

Chemical data assimilation and inverse modelling

13:00 – 13:40	R. Menard: Chemical data assimilation [keynote]
13:40 – 14:00	J. Barré, M. Ades, A. Inness, A. Agusti-Panareda, R. Engelen, J. Flemming, Z. Kipling, S. Massart, M. Parrington, V. H. Peuch: Recent developments on the ECMWF's CAMS data assimilation suite
14:00 – 14:20	A. Penenko, Zhadyra Mukatova, Ann Blem: Source identification from image-type measurement data for atmospheric chemistry models
14:20 – 14:40	P. Franke, A. C. Lange, H. Elbern: Quantitative estimation of volcanic ash emissions and its uncertainty by a combined minimization-particle smoother
14:40 – 16:00	Posters & Coffee

Assimilation of cloud-affected satellite observations

16:00 – 16:40	A. Geer: All-sky assimilation of satellite radiances for global weather forecasting [keynote]
16:40 – 17:00	L. Scheck, B. Mayer, M. Weissmann: Using solar satellite channels for convective-scale data assimilation
17:00 – 17:20	L. Bach, C. Schraff, C. Köpken-Watts, U. Blahak, L. Scheck, R. Potthast: Towards improving the accuracy of low clouds and convective initiation in an LETKF
17:20 – 17:40	K. Lonitz, A. Geer, R. Forbes, P. Bechtold: Addressing biases in cloudy situations using the all-sky assimilation of microwave radiances
17:40 – 18:00	T. Honda, Shunji Kotsuki, Guo-Yuan Lien, Yasumitsu Maejima, Kozo Okamoto, Takemasa Miyoshi: Assimilation of Himawari-8 all-sky radiances every 10 minutes: A case of the September 2015 Kanto-Tohoku rainfall

Friday, 9 March

Ensemble forecasting and predictability

09:00 – 09:40	M. Surcel: On the scale- and case-dependence of the predictability of precipitation [keynote]
09:40 – 10:00	T. Selz: Estimating the intrinsic limit of predictability using a stochastic convection scheme
10:00 – 10:20	M. Denhard: Spread-skill properties of the global ICON-EPS in comparison to the ECMWF-EPS and consequences for data assimilation

Coffee

Assimilation of cloud-affected satellite observations

11:00 – 11:20	M. Fielding, M. Jansiková: Towards real-time assimilation of cloud radar and lidar observations in the ECMWF 4D-Var System
11:20 – 11:40	S. Kotsuki, K. Terasaki, T. Miyoshi: Ensemble-based data assimilation of GPM/DPR reflectivity into the Nonhydrostatic Icosahedral Atmospheric Model (NICAM)
11:40 – 12:00	J. Otkin, R. Potthast, A. Lawless: Nonlinear bias correction for satellite data assimilation using a Taylor series polynomial expansion of the observation departures

Lunch

Advances in methodology and non-Gaussian approaches

13:00 – 13:20	C. Bishop: Episodic, non-linear and non-Gaussian: ensemble data assimilation for bounded semi-positive definite variables like clouds
13:20 – 13:40	D. Hotta: Toward improved LETKF assimilation of non-local and dense observation by direct covariance localization in model space
13:40 – 14:00	E. Holm: Developments in the ECMWF humidity background errors
14:00 – 14:20	Final remarks