

# 2016 EnKF workshop program

Monday 20/06/2016

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09:00-11:30	<b>Bus trip to Ulvik</b>	
11:30-12:00	<b>Store luggage (check-in later)</b>	
12:00-13:00	<b>Lunch</b>	
13:00-13:15	<b>Welcome, Randi Valestrand (IRIS)</b>	
13:15-14:00	<b>Alexander Barth</b> (University of Liège), Yajing Yan (Université Savoie Mont Blanc), Aida Alvera-Azcárate and Jean-Marie Beckers (University of Liège): "Local ensemble assimilation scheme with global constraints and conservation"	
14:00-14:30	<b>Nadia Ayoub</b> , Pierre De Mey (LEGOS): "An EnKF application to constrain the 3D circulation in a coastal model: what is the potential impact of satellite observations on ocean state estimates?"	Session chair: Alberto Carrassi (NERSC)
14:30-15:00	<b>Jesper Sandvig Mariegaard</b> , Henrik Madsen, Ole Svenstrup Petersen (DHI group): "Assimilation of along-track altimetry data with correlated measurement errors in MIKE 21/3 FM"	
15:00-15:30	<b>Break (Check-in)</b>	
15:30-16:00	<b>Mohamad El Gharamti</b> , Annette Samuelsen, Laurent Bertino (NERSC), Ehouarn Simon (ENSEEIH): "A one-step-ahead smoothing formulation of the EnKF: Application to state-parameters estimation for ocean ecosystem in the north Atlantic"	
16:00-16:30	<b>Abhishek Shah</b> (NERSC & University of Bergen), Laurent Bertino and Mohamad El Gharamti (NERSC): "An efficient ensemble data assimilation approach to deal with range limited observations"	Session chair: Randi Valestrand (IRIS)
16:30-17:00	<b>Jostein Blyverket</b> (Norsk Institutt for Luftforskning, NILU/University of Bergen): "Understanding soil moisture in the northern areas: Toward an integrated representation of the arctic hydrological cycle"	
17:00-17:15	<b>Break</b>	
17:15-18:00	<b>Marc Bocquet</b> (Université Paris-Est), Alberto Carrassi (NERSC), Karthik S. Gurumoorthy, Amit Apte (Tata Institute of Fundamental Research), Colin Grudzien, Chris K. R. T. Jones (University of North Carolina): "On the convergence of (ensemble) Kalman filters and smoothers onto the unstable subspace"	Session chair: Geir Evensen (IRIS & NERSC)
18:00-18:30	<b>Patrick Raanes</b> (NERSC & University of Oxford): "On the ensemble Rauch-Tung-Striebel smoother and its equivalence to the ensemble Kalman smoother"	
19:30	<b>Dinner</b>	

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\*Invited talks in **blue** color, and speakers' names in **boldface**

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Tuesday 21/06/2016

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09:15-09:45	<b>Geir Evensen</b> (IRIS & NERSC), "Stable and fast inversion with large data sets and non-diagonal R"	Session chair: Andreas Stordal (IRIS)
09:45-10:15	Mike Christie (Heriot Watt University), <b>Claudia Schillings</b> , Andrew Stuart (University of Warwick): "Analysis of the Ensemble Kalman Filter for Inverse Problems"	
<b>10:15-10:30</b>	<b>Break</b>	
10:30-11:15	<b>Raul Tempone</b> (KAUST): "A short overview of Multilevel Monte Carlo methods with applications in Ensemble Kalman Filtering"	
11:15-11:45	<b>Håkon Hoel</b> (University of Oslo), Alexey Chernov (Universität Oldenburg), Kody J. H. Law (Oak Ridge National Laboratory), Fabio Nobile (PF de Lausanne), Raul Tempone (KAUST): "Multilevel Monte Carlo Ensemble Kalman filtering (MLEnKF) in finite and infinite dimensions"	Session chair: Dean Oliver (CIPR)
11:45-12:15	<b>Alexander Litvinenko</b> (KAUST), Hermann G. Matthies, Elmar Zander, Bojana V. Rosic (Institut für Wissenschaftliches Rechnen): "Approximation of non-linear Bayesian Update"	
<b>12:15-13:00</b>	<b>Lunch</b>	
13:00-13:45	<b>Arnold W. Heemink</b> (TU Delft): "Ensemble methods for variational data assimilation"	
13:45-14:15	<b>Sha Lu</b> , Haixiang Lin, Arnold W. Heemink, Guangliang Fu (TU Delft), Arjo J. Segers (TNO): "Trajectory-based variational data assimilation to estimate volcanic ash emissions"	Session chair: Marc Bocquet (Université Paris-Est)
14:15-14:45	<b>Guangliang Fu</b> , Haixiang Lin, Arnold W. Heemink (TU Delft), Arjo J. Segers (TNO), Sha Lu (TU Delft): "A backtracking-localized Ensemble Kalman Filter for assimilating aircraft in-situ volcanic ash measurements"	
<b>14:45-15:00</b>	<b>Break</b>	
15:00-15:30	<b>Jan Magnusson</b> (NVE), Andreas S. Stordal (IRIS), Richard Essery (University of Edinburgh), Adam Winstal, Tobias Jonas (WSL Institute for Snow and Avalanche Research SLF): "Improving physically based snow simulations by assimilating snow depths using the particle filter"	Session chair: Xiaodong Luo (IRIS)
15:30-16:00	<b>Alberto Carrassi</b> (NERSC), Marc Bocquet (Université Paris-Est), Alexis Hannart (IFAEI, CNRS/CONICET/UBA) and Michael Ghil (École Normale Supérieure & University of California): "Estimating model evidence using data assimilation"	
16:00-17:00	Poster session	
<b>17:30</b>	<b>Farm trip + dinner (departure from the hotel)</b>	

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# 2016 EnKF workshop program

Wednesday 22/06/2016

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08:30-09:15	<b>Remus Hanea</b> (Statoil), Tao Feng: "Recent developments and applications of Robust Optimization in Statoil, with an example of optimizing WAG strategies"		
09:15-09:45	<b>Bogdan Sebacher</b> (TU Delft), Andreas S. Stordal (IRIS), Remus Hanea (Statoil): "Different parameterizations of the initial ensemble for a channelized reservoir in an assisted history matching context"	Session chair: Geir Nævdal (IRIS)	
<b>09:45-10:00</b>	<b>Break</b>		
10:00-10:30	Victor Zaytsev (Total & MINES ParisTech), Pierre Biver (Total), <b>Hans Wackernagel</b> (MINES ParisTech & NERSC), Denis Allard (INRA): "Geostatistical change-of-support models for irregular grids"		
10:30-11:00	<b>Kristian Fossum</b> , Trond Mannseth (Uni Research CIPR): "Large-ensemble data assimilation using an upscaled model"		
<b>11:00-11:30</b>	<b>Break (check out)</b>		
11:30-12:00	<b>Geir Nævdal</b> , Ove Sævareid, and Rolf J. Lorentzen (IRIS): "Ensemble based data assimilation for a multi-compartment porous media model"	Session chair:	
12:00-12:30	<b>Yvonne Ruckstuhl</b> (LMU), Tijana Janjic Pfander (Hans Ertel Centre for Weather Research): "Parameter estimation using the ensemble Kalman filter approach"	Remus Hanea (Statoil)	
<b>12:30-13:30</b>	<b>Lunch</b>		
13:30-14:00	<b>Yanhui Zhang</b> , Olwijn Leeuwenburgh (TNO): "Comparative study of ensemble-based seismic history matching using image-oriented parameterizations"	Session chair:	
14:00-14:30	<b>Xiaodong Luo</b> , Tuhin Bhakta (IRIS), Morten Jakobsen (University of Bergen & IRIS), and Geir Nævdal (IRIS): "Efficient big data assimilation through sparse representation: A case study in 4D seismic history matching"	Trond Mannseth (CIPR)	
<b>14:30-14:45</b>	<b>Concluding remarks</b>		
<b>15:15-17:45</b>	<b>Return trip to Bergen</b>		

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# 2016 EnKF workshop program

**Poster session: 16:00-17:00, Tuesday 21/06/2016**

- **Alberto Carrassi** (NERSC), Diego Pazo and Juan Manuel Lopez (IFCA, CSIC-Universidad de Cantabria): “Data Assimilation by delay-coordinate nudging”
- **Alexey Khrulenko**, Anton Shchipanov (IRIS): “Conditioning Reservoir Models to Pressure Transients by Iterative Ensemble Smoother”
- **Aojie Hong**, Reidar B. Bratvold (UiS), Gier Nævdal (IRIS): “Realistic Application of EnKF on Capacitance-Resistance Models”
- **Jana de Wiljes** (Universität Potsdam), Sebastian Reich (Universität Potsdam & University of Reading): “Continuous-time ensemble transform particle filter”
- **Julius Vira** (Finnish Meteorological Institute): “EnKF-based reanalysis of SO<sub>2</sub> emission and transport during the 2008 eruption of Kasatochi”
- **Patrick Raanes** (NERSC & University of Oxford), Marc Bocquet (Université Paris-Est): “The finite-size EnKF and inflation”
- Walter Acevedo (Universität Potsdam), Gottfried Hastermann (Freie Universität), Sebastian Reich, **Maria Reinhardt** (Universität Potsdam): “EnKF with a balance preserving interpolation scheme”
- **Martin Verlaan**, Camille Le Coz and Ivan Garcia (TU Delft): “Efficient data-assimilation with POD in time”
- **Xiaodong Luo**, Tuhin Bhakta (IRIS): “Estimating observation error covariance matrix of seismic data from a perspective of image processing”

\*Presenters' names in **boldface**