

Tuesday, May 25

MS99

Reduced-Order Models for Data Assimilation - Part II of II

12:45 PM - 2:45 PM

For Part I, see [MS81](#)

Data Assimilation (DA) combines computational models and observational data to produce an estimate of the state of the physical system under investigation. DA plays an especially important role in forecasting atmospheric and oceanic phenomena. Models of such phenomena are commonly high-dimensional, with nonlinear coupling between variables, and often involve non-Gaussian noise, making the estimation of the state of the system computationally challenging. This minisymposium brings together talks that address the high-dimensionality of models and data, through strategies for reducing the order of the model, reducing the amount of computation required to simulate the model, or reducing the complexity of the stochastic components of the model. Several talks additionally address the impact that order reduction, approximation errors, and unmodeled scales have not only on the accuracy of the models but also on the quality of the state estimates obtained through DA.

Organizer: Aishah Albarakati

Clarkson University, U.S.

Marko Budišić

Clarkson University, U.S.

Erik Van Vleck

University of Kansas, U.S.

12:45-1:10 Data Assimilation: from Dynamically Based to Data-Driven Approaches [abstract](#)

Alberto Carrassi, University of Reading, United Kingdom; Marc Bocquet, Ecole Nationale des Ponts et Chaussées, France; Julien Brajard, NERSC/LBL, U.S.; Jonathan Demaeyer, Royal Meteorological Institute of Belgium, Belgium; Colin J. Grudzien, University of Nevada, Reno, U.S.; Patrick Raanes, NORCE Norwegian Research Centre, Norway; Stéphane Vannitsem, Royal Meteorological Institute of Belgium, Belgium

1:15-1:40 Data Assimilation for PDEs using Adaptive Moving Meshes [abstract](#)

Cassidy Krause, Weizhang Huang, Dave Mechem, Erik Van Vleck, and Min Zhang, University of Kansas, U.S.

1:45-2:10 On the Numerical Integration of the Lorenz-96 Model, with Scalar Additive Noise, for Benchmark Twin Experiments [abstract](#)

Colin J. Grudzien, University of Nevada, Reno, U.S.; Marc Bocquet, Ecole Nationale des Ponts et Chaussées, France; Alberto Carrassi, University of Reading, United Kingdom

2:15-2:40 Observation Uncertainty due to Unresolved Scales in Data Assimilation [abstract](#)

Sarah L. Dance, University of Reading, United Kingdom

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