

Big Data, Data Assimilation and Uncertainty Quantification
Institut Henri Poincaré, Paris, France, 12-15 November 2019

Workshop day 1
Tuesday 12th November 2019

09:00-09:30 [Registration](#)

09:30-10:00 Opening : **Michael Ghil**
Data Assimilation: Interesting Past, Bright Future

10:00-10:30 **Omar Ghattas**
Scalable optimal experimental design for Bayesian inverse problems

10:30-11:00 [Coffee break](#)

11:00-11:30 **Svletana Dubinkina**
Numerical Shadowing for Data Assimilation

11:30-12:00 **François Counillon**
Enhancing the skill of dynamical climate prediction

12:00-12:30 **Hailiang Du**
Account for Model Discrepancy via Multi-model Cross Pollination in Time

12:30-14:00 [Lunch time \(on your own\)](#)

14:00-14:30 **Massimo Bonavita**
Data Assimilation in Global NWP: A case study in Big Data and Uncertainty Quantification

14:30-15:00 **Takemasa Miyoshi**
Big Data Assimilation: 30-second-update Weather Forecasting and Perspectives toward DA-AI Integration

15:00-15:30 **Bo-Wen Shen**
Is Weather Chaotic? Coexistence of Chaos and Order within a Generalized Lorenz Model

15:30-16:00 [Coffee break](#)

16:00-16:30 **Luca Biferale**
Continuous Data Assimilation and Flow Control using Particles in Rayleigh-Benard convection

16:30-17:00 **Roman Khotyachuk**
Big Data simulation and analysis of numerical solutions of the Elder problem

17:30-21:30 [Coktail party at the Zamansky tower on the Jussieu Campus](#)

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Workshop day 2
Wednesday 13th November 2019

09:00-09:30 Dan Crisan

Data assimilation using particle filters for class of partially observed stochastic geophysical fluid dynamics models. Part I

09:30-10:00 Colin Cotter

Data assimilation using particle filters for class of partially observed stochastic geophysical fluid dynamics models. Part II

10:00-10:30 Étienne Mémin

Stochastic modelling of geophysical flows

10:30-11:00 Coffee break

11:00-11:30 Mickaël Chekroun

TBA

11:30-12:00 Colin Grudzien

On the numerical integration of the Lorenz-96 model, with scalar additive noise, for benchmark twin experiments

12:00-12:30 Ronan Fablet

Neural networks and dynamical systems: dealing with partially-observed

12:30-14:00 Lunch time (on your own)

14:00-14:30 Matthias Morzfeld

Gaussian approximations in smoothers and filters for data assimilation

14:30-15:00 Lokahith Agasthya

Continuous Data Assimilation and Flow Control using Particles in Rayleigh-Benard Convection

15:00-15:30 Alban Farchi

Efficiency and Consistency of covariance localisation in the ensemble Kalman filter

15:30-16:00 Coffee break

16:00-16:30 Francine Schevenhoven

Improving weather and climate predictions by training of supermodels

16:30-17:00 Olivier Pannekoucke

Design of the parametric Kalman filter dynamics: from the symbolic computation to the numerical integration

17:00-17:30 Oliver Dunbar

TBA

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Workshop day 3
Thursday 14th November 2019

09:00-09:30 Marc Bocquet

Data-driven reconstruction of chaotic dynamics using data assimilation and machine learning

09:30-10:00 Lenny Smith

Questions on the Table: Rethinking Our Aims in the Face of Buzz Words and Naive Reviewers

10:00-10:30 Mauel Pulido

Model error covariance estimation using the batch and online Expectation-Maximization algorithms in ensemble Kalman and particle filters

10:30-11:00 Coffee break

11:00-11:30 Brian Hunt

Machine Learning for Forecasting and Data Assimilation

11:30-12:00 Chris Jones

Data Assimilation on Adaptive Meshes

12:00-12:30 F.-X. Le Dimet

Sensitivity with respect to observations in Variational Data Assimilation

12:30-14:00 Lunch time (on your own)

14:00-14:30 Edris Titi

Rigorous analysis and numerical implementation of a data assimilation algorithm

14:30-15:00 Peter-Jan van Leeuwen

Nonlinear data assimilation for high-dimensional systems using machine learning methods.

15:00-15:30 Jana de Wiljes

Analysis of a localised nonlinear Ensemble Kalman Bucy Filter with complete and accurate observations

15:30-16:00 Coffee break

16:00-16:30 Avneet Singh

Choices and effects of lagging window(s) in strongly coupled data assimilation experiments

16:30-17:00 Jochen Broecker

What is the correct cost function of weakly constrained 4DVar ?

17:00-17:30 Louis Sharrock

Joint Online Parameter Estimation and Optimal Sensor Placement in Continuous Time with Applications to a Stochastic Advection Diffusion Equation

17:30-18:00 Alberto Carrassi

On temporal scale separation in coupled data assimilation with the ensemble Kalman filter

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Workshop day 4
Friday 15th November 2019

09:00-09:30 Stéphane Vannitsem

Routes to long-term predictability in a reduced-order coupled ocean-atmosphere model

09:30-10:00 Olivier Talagrand

Assimilation of observations of the solar magnetic cycle

10:00-10:30 Valérie Monbet

Estimation in non parametric state-space models

10:30-11:00 [Coffee break](#)

11:00-11:30 Dmitri Kondrashov

Data-adaptive harmonic analysis of high-dimensional turbulent flows

11:30-12:00 Lea Oljaca

Stability of the nonlinear filter with deterministic dynamics

12:00-12:30 Phil Browne

Coupled data assimilation - challenges and practicalities