

ECMWF/WWRP Workshop: Model Uncertainty



11-15 April 2016

Programme

Monday 11 April		
13:30	Registration and coffee	<i>Weather Room</i>
14:00-14:15	Welcome	Erland Källén
14:15-14:45	Weather prediction in a world of uncertainties: should we care about model uncertainty?	Roberto Buizza
Chair: Tim Palmer		
Session 1: Fundamental ideas		
14:45-15:15	Physically-based stochastic parameterisation	George Craig (LMU Munich)
15:15-15:45	Stochastic parametrisation models for GFD	Darryl Holm (Imperial College)
15:45-16:15	<i>Coffee break</i>	<i>Concourse</i>
Session 2: Diagnosing model error		
16:15-16:45	Assessing the contribution of mesoscale convective systems to model error using simulated IR imagery and numerical simulation	Glenn Shutts (UKMO)
16:45-17:15	A weather-system perspective on forecast errors	Heini Wernli (ETHZ)
17:15-17:45	Resolved and parametrized energy cascades in the IFS	Sylvie Malardel (ECMWF)
18:00	<i>Drinks reception</i>	<i>Atrium</i>

Tuesday 12 April

Chair: Roberto Buizza

09:30-10:00	Diagnosing and representing model error in 4DVar	Katherine Howes (University of Reading)
10:00-10:30	New covariance statistics of model error for use in weak-constraint 4DVar	Jacky Goddard (ECMWF)
10:30-11:00	Ensemble data assimilation using a unified representation of model error	Chiara Piccolo (UKMO)
11:00-11:30	<i>Coffee break</i>	<i>Concourse</i>
11:30-12:00	Diagnosing systematic numerical weather prediction model bias over the Antarctic from short-term forecast tendencies	Steven Cavallo (Oklahoma University)
12:00-12:30	Using forecast temporal variability to evaluate model behaviour	Carolyn Reynolds (NRL)
12:30-13:00	Using ensemble data assimilation to diagnose model uncertainty	Mark Rodwell (ECMWF)
13:00-14:00	<i>Lunch break</i>	

Session 3: Operational schemes

Chair: Richard Swinbank

14:00-14:30	Model uncertainty representations in the IFS	Martin Leutbecher (ECMWF)
14:30-15:00	A review of model-error representation in the Météo-France ensemble systems	Laure Raynaud (Météo-France)
15:00-15:30	Stochastic parameterization development in the NOAA/NCEP Global Forecast System	Philip Pegion (NOAA)
15:30-16:00	<i>Coffee break</i>	<i>Concourse</i>
16:00-16:30	Model error representation in the Canadian Ensemble Prediction Systems	Leo Separovic (Environment Canada)
16:30-17:00	Representing model error in the Met Office convection permitting ensemble prediction system	Anne McCabe (UKMO)
17:00-17:30	Model Uncertainty Representation in COSMO-DE-EPS	Susanne Theis (DWD)

Wednesday 13 April

Chair: Glenn Shutts

Session 4: Latest research

09:30-10:00	Stochastic parameterization: Towards a new view of Weather and Climate Models	Judith Berner (NCAR)
10:00-10:30	Model uncertainty estimation in global ocean models: Stochastic parametrizations of ocean mixing	Stephan Juricke (Oxford University)
10:30-11:00	Representing model uncertainty for climate forecasts	Antje Weisheimer (ECMWF)
11:00-11:30	<i>Coffee break</i>	<i>Concourse</i>
11:30-12:00	On the diagnosis of model error statistics using weak-constraint data assimilation	Neill Bowler (UKMO)
12:00-12:30	A comparison of the model error and state formulations of weak-constraint 4D-Var	Amos Lawless (University of Reading)
12:30-13:00	Using trajectories of ensemble analyses and tools from weak constraint 4D-Var to represent model uncertainty	Craig Bishop (NRL)
13:00-14:00	<i>Lunch break</i>	

Chair: Craig Bishop

14:00-14:30	Model error representation in convection-permitting forecasts and ensemble data assimilation	Glen Romine (NCAR)
14:30-15:00	Improving the Stochastically Perturbed Parametrisation Tendencies scheme using High-Resolution Model Simulations	Hannah Christensen (Oxford University)
15:00-15:30	Impact of a stochastic parameterization of cumulus convection, using cellular automata, in a meso-scale ensemble prediction system	Lisa Bengtsson (SMHI)
15:30-16:00	<i>Coffee break</i>	<i>Concourse</i>
16:00-16:30	Parameter uncertainty of chaotic systems	Heikki Haario (Lappeenranta University)
16:30-17:00	Inducing tropical cyclones to undergo brownian motion	Daniel Hodyss (NRL)
17:00-17:30	Observational based stochastic convection parameterization	Jesse Dorrestijn (CWI Amsterdam)
18:00	<i>Posters / tapas</i>	<i>ECMWF restaurant</i>

Thursday 14 April

WG1: What are the sources of model error?

Chair: George Craig / Co-chair: Richard Forbes

WG2: How can we improve the diagnosis of model error?

Chair: Heini Wernli / Co-chair: Mark Rodwell

WG3: What are and how do we measure the pros and cons of existing approaches?

Chair: Carolyn Reynolds / Co-chair: Martin Leutbecher

WG4: How do we improve the physical basis for model uncertainty schemes?

Chair: Judith Berner / Co-chair: Sarah-Jane Lock

09:30-11:00	Working groups	<i>Lecture Theatre, Council Room, LCR, MR1</i>
11:00-11:30	<i>Coffee break</i>	
11:30-13:00	Working groups	<i>Lecture Theatre, Council Room, LCR, MR1</i>
13:00-14:00	<i>Lunch break</i>	
14:00-15:30	Working groups	<i>Lecture Theatre, Council Room, LCR, MR1</i>
15:30-16:00	<i>Coffee break</i>	
16:00-17:30	Working groups	<i>Lecture Theatre, Council Room, LCR, MR1</i>

Friday 15 April

09:30-10:30	Working groups	<i>Lecture Theatre, Council Room, LCR, MR1</i>
10:30-11:00	<i>Coffee break</i>	<i>Concourse</i>
11:00-13:00	Plenary	<i>Council Room</i>