

Annual Seminar 2017

Ensemble prediction: past, present and future

11-14 September 2017



Monday 11 September

11:00-12:45	Registration and coffee	<i>Weather Room</i>
12:45-13:00	Welcome and opening	Andrew Brown (ECMWF)
Session 1	Roots of ensemble prediction: what were the challenges 25 years ago? How were they addressed?	Chair: Roberto Buizza (ECMWF)
13:00-13:45	1 Historical perspective: earlier ensembles and forecasting forecast skill	Eugenia Kalnay (University of Maryland)
13:45-14:30	2 Historical Review: Foundational studies in atmospheric predictability	Joe Tribbia (NCAR)
14:30-15:15	3 The ECMWF approach to ensemble prediction	Tim Palmer (University of Oxford)
15:15-15:45	<i>Coffee break</i>	
15:45-16:30	4 The NCEP approach to ensemble prediction: Analysis errors and ensemble perturbations	Zoltan Toth (NOAA/ESRL)
16:30-17:15	5 The Canadian approach to ensemble prediction	Peter Houtekamer (CMC)
17:15-17:30	Introduction to poster session	David Richardson (ECMWF)
17:30-18:30	Poster Session: operational global and limited area ensembles	
18:00-19:30	<i>Drinks</i>	

Tuesday 12 September

Session 2	Ensemble initial conditions	Chair: Peter Houtekamer (CMC)
09:30-10:15	6 EnKF methods to initialize ensembles	Neill Bowler (UK Met Office)
10:15-11:00	7 Ensemble of Data Assimilations methods	Laure Raynaud (Météo-France)
11:00-11:30	<i>Coffee break</i>	
11:30-12:15	8 Combining singular vector and ensemble of analyses perturbations to initialize ensemble forecasts	Simon Lang (ECMWF)
12:15-13:00	9 Ensemble methods in the ocean for reanalyses, data assimilation and coupled forecasts	Magdalena Balmaseda (ECMWF)
13:00-14:00	<i>Lunch break</i>	

Session 3	Representation of model uncertainties in ensembles	Chair: Tim Palmer (University of Oxford)
14:00-14:45	10 Stochastic methods for representing atmospheric model uncertainties in ECMWF's IFS model	Sarah-Jane Lock (ECMWF)
14:45-15:30	11 Ensemble data assimilation using a unified representation of model error	Chiara Piccolo (UK Met Office)
15:30-16:15	<i>Coffee break</i>	
16:15-17:00	12 Model error schemes in the Météo-France ensembles	François Bouttier (Météo-France)
17:00-17:45	13 Model error schemes for the ocean	Laure Zanna (University of Oxford)

Wednesday 13 September

Session 4	Error growth, signal propagation and scale interaction	Chair: Eugenia Kalnay (University of Maryland)
09:30-10:15	14 Upscale and downscale error growth	Dale Durran (University of Washington)
10:15-11:00	15 Tropical-extratropical interactions in ensemble predictions from sub-seasonal to decadal scales	Franco Molteni (ECMWF)
11:00-11:30	<i>Coffee break</i>	
11:30-12:15	16 Seasonal forecast ensembles: How confident are predictability estimates of the NAO?	Antje Weisheimer (ECMWF and University of Oxford)
12:15-13:00	17 Ensemble size: how suboptimal is less than infinity?	Martin Leutbecher (ECMWF)
13:00-14:00	<i>Lunch break</i>	
Session 5	End-to-end ensembles: a look into applications	Chair: Francesca di Giuseppe (ECMWF)
14:00-14:45	18 Ensemble forecast products: supporting users' decision making	David Richardson (ECMWF)
14:45-15:30	19 Hydrological ensembles and the HEPEX experience	Hannah Cloke (University of Reading)
15:30-16:15	<i>Coffee break</i>	
16:15-17:00	20 Slowly but surely: Observing and supporting the growing use of ensemble products	Renate Hagedorn (DWD)
17:00-18:30	Panel discussion: Future directions for ensemble systems <u>Panel</u> François Bouttier (Météo-France) Renate Hagedorn (DWD) Sarah-Jane Lock (ECMWF) Laure Raynaud (Météo-France)	Chair: Tim Stockdale (ECMWF)
18:30	<i>Pre-dinner drinks</i>	
19:00	<i>Seminar dinner</i>	

Thursday 14 September

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Session 6	Ensemble verification and diagnostics	Chair: Anna Ghelli (ECMWF)
09:30-10:15	21 Ensemble verification metrics	Debbie Hudson (BoM)
10:15-11:00	22 Ensemble verification and extreme events	Chris Ferro (University of Exeter)
11:00-11:30	<i>Coffee break</i>	
11:30-12:15	23 Diagnostics of ensemble data assimilation and ensemble forecasts	Mark Rodwell (ECMWF)
12:15-13:00	24 Diagnostic and verification of low-frequency phenomena	Laura Ferranti (ECMWF)
13:00-14:00	<i>Lunch break</i>	
Session 7	Expanding the ensemble horizon	Chair: Joe Tribbia (NCAR)
14:00-14:45	25 Ensembles for air quality prediction	Angela Benedetti (ECMWF)
14:45-15:30	26 Very high-resolution, non-hydrostatic, short-range ensembles	Inger-Lise Frogner (Norwegian Meteorological Institute)
15:30-16:15	<i>Coffee break</i>	
16:15-17:00	27 The Forecast Skill Horizon	Roberto Buizza (ECMWF)
17:00-17:45	28 Ensembles for climate projections	David Sexton (UK Met Office)
17:45-18:00	Seminar closure	Andrew Brown (ECMWF)