Scientific Programme of International Conference EMMDA

Day 1: 24 February 2020		
8:30 – 9:30		Registration
9:30 – 10:30		**Inaugural Session**
10:30 – 11:00 High Tea		
11:00 – 13:00: Technical Session 1 - Ensemble Methods in Global Weather Prediction **Chairperson: Zoltan Toth, ESRL/NOAA, USA**		
11:00 – 11:30	Eugenia Kalnay,UoM	Can We Improve Substantially Weather Forecasts without Cheating?
11:30 – 12:00	Warren Tennant, Met Office, UK	Recent Developments in Global Ensemble Prediction at Met Office
12:00 – 12:20	Mrutyunjay Mohapatra, IMD	Probabilistic Forecasting in IMD: Current Status and Future Scope.
12:20 – 12:40	Parthasarathi Mukhopadhyay,IITM	Performance of High Resolution Ensemble Prediction System in Predicting Extreme Events over Indian Region.
12:40 – 13:00	Joohyung Son, KMA	Introduction to Korean Integrated Model (KIM) based Global Ensemble Prediction System.
13:00 – 14:00 Lunch		
14:00 – 15:30: Technical Session 2 - Ensemble Methods in Data Assimilation– 1 **Chairperson:Eugenia Kalnay, University of Maryland, USA**		
14:00 – 14:30	Daryl Kleist, NCEP/NOAA	Data Assimilation for the Unified Forecast System: Plans for GFS Version 16 and Progress of JEDI.
14:30 – 14:50	V.S. Prasad, NCMRWF	4D-Ens-Var Analysis System at NCMRWF
14:50 – 15:10	John P. George, NCMRWF	Hybrid Variational–Ensemble Data Assimilation in the NCUM NWP System and IMDAA Regional Reanalysis
15:10 – 15:30	Prashant Kumar, SAC	Assimilation of INSAT-3D Thermal Infrared Window Imager Observation using Particle Filter
15:30 – 16:00 - Tea and Poster Session		
16:00 – 17:40: Technical Session 2 - Ensemble Methods in Data Assimilation– 2 **Chairperson: Daryl Kleist, NCEP/NOAA, USA**		
16:00 – 16:30	Zoltan Toth, ESRL/NOAA	Ensembles: A Critical Review
16:30 – 17:00Via Video Conference	Javier Amezcua, Reading University UK	Assimilation of Atmospheric Infrasound Data to Constrain Winds using an EnKF
17:00 – 17:20	Ji-Hyun Ha, KMA	Hybrid Data Assimilation in the KIM Forecasting System at KMA
17:20 – 17:40	Amit Apte, ICTS, Bengaluru	Hybrid Particle-ensemble Kalman Filter for Lagrangian Data Assimilation.
19:30-21:30 - Conference Dinner hosted by Secretary, MoES at India Habitat Centre, New Delhi		

Day 2: 25 February 2020		
09:00 – 10:20: Technical Session 2 -Ensemble Methods in Data Assimilation– 3 **Chairperson: E. N. Rajagopal, NCMRWF**		
09:00 – 09:20	Robert Maisha, SAWS, South Africa	Ensemble Forecasting and Data Assimilation at SAWS.
09:20 – 09:40	Arya Paul, INCOIS	LETKF-ROMS: An Improved Predictability System for the Indian Ocean
09:40 – 10:00	Deepak Subramani, IISc	Probabilistic Forecasting and Bayesian Data Assimilation using Dynamically Orthogonal Equations.
10:00 – 10:20	Siva Reddy Sanikommu, KAUST	Efforts on Developing Efficient Ensemble Data Assimilation System for theRed Sea at KAUST.
10:20 – 10:50–Teaand Poster Session		
10:50 – 14:30: Technical Session 3 – Ensemble Methods in Monthly and Seasonal Forecasting **Chairperson: Warren Tennant, Met Office, UK**		
10:50 – 11:20	Harry H. Hendon, BoM	Overview of BoM Operational S2S Ensemble Prediction Systems and Future Plans.
11:20 – 11:40	A K Sahai, IITM	Ensemble Prediction System for Sub-seasonal Variability
11:40 – 12:00	A Suryachandra Rao, IITM	Ensemble Seasonal Prediction of Indian Summer Monsoon
12:00– 12:20	O. P. Sreejith, IMD Pune	Present Operational Seasonal Forecast System of IMD
12:20 – 12:40	Pil-Hun Chang, KMA	Climate Prediction System. of KMA: Current Status and Plans
12:40 – 13:40 - Lunch		
13:40 – 14:10 Via Video Conference	Roberto Buizza, ECMWF/Sant'Anna SAS, Pisa	Data Assimilation and Ensembles: Two Invaluable Tools to Increase Predictability and Quantify Uncertainty
14:10 – 14:30	A K Mitra, NCMRWF	NCMRWF Coupled Ensemble Extended Range Prediction System.
14:30 – 16:10: Technical Session 4 - Convection Permitting Ensemble Prediction Systems **Chairperson: Harry Hendon, BoM, Australia**		
14:30 – 15:00 Via Video Conference	Stuart Webster, Met Office, UK	Overview of Convection Permitting Ensembles Work at the Met Office
15:00 – 15:30 Via Video Conference	Stuart Moore, NIWA, New Zealand	Convective scale ensembles at NIWA.
15:30 – 15:50	Suneet Diwedi	Energetically Consistent Stochastic and Deterministic Kinetic Energy Backscatter Schemes for Atmosphere –Ocean Models
15:50 – 16:10	Govindan Kutty, IIST, Thiruvanthapuram	Understanding the Predictability of Extreme Weather Events using Ensemble-based Data Assimilation
16:10 – 16:40 - Tea and Poster Session		
16:40 – 17:50: Technical session 5 - Verification of Ensemble Weather Forecasts **Chairperson:Michael Naughton, BoM, Australia**		
16:40 – 17:10 Via Video Conference	Martin Leutbecher, ECMWF	Ensemble Forecasting at ECMWF.
17:10 – 17:30	Raghavendra Ashrit, NCMRWF	Application of Spatial Verification Methods for Ensemble Rainfall Forecastsover India.
17:30 – 17:50	Abhijit Sarkar, NCMRWF	Verification of Regional Ensemble Prediction System of NCMRWF (NEPS-R)
19:30-21:30 Special Dinner hosted by DGM, IMD		

Day 3: 26 February 2020		
09:00 – 11:40: Technical Session 6 - Applications of Ensemble Weather Forecasts **Chairperson: Prof. A. Chandrasekar, IIST, Thiruvananthapuram**		
09:00 – 09:30	Eugenia Kalnay, UoM	(i) Leveraging oscillatory modes to improve forecasts of chaotic processes, with applications to the Indian monsoon (ii) Effective Assimilation of Altimetry Observations with the CFS-LETKF System
09:30 – 10:00	Michael Naughton, BoM	BoM Development and Use of Ensembles inNumerical Weather Prediction and Applications.
10:00 – 10:20	Ravi S Nanjundiah, Director, IITM	Ensemble Forecast and their Application from Short Range to Seasonal Scales
10:20 – 10:40	S. C. Kar, NCMRWF	Probabilistic Predictions for HydrologyApplications.
10:40 – 11:00–Tea and Poster Session		
11:00 – 11:20	C Balaji, IIT-Madras	Ingesting Multi-satellite Radiances to Improve the Predictability of Regional NWP Model
11:20 – 11:40	Boonlert Archevarahuprok, TMD	TMD's Numerical Weather Prediction System
11:40 – 13:00: Poster Presentations		
13:00 – 14:00 – Lunch		
14:00 – 15:00: Concluding Session		
Panel discussion		Chairperson: Ravi S Nanjundiah Panel members: E. Kalnay, C. Balaji, Z. Toth, W. Tennant, E. N. Rajagopal, Harry Hendon
15:00 - 15:30 Tea		

Poster Session

Day 1: Theme - Global Ensemble/DA			
Sl. No.	***Name of Author***	***Affiliation***	***Poster Title***
1	Ch. P. R. Sandeep (RS)	IIT, Madras	GSI Based Three-Dimensional Ensemble–Variational Hybrid Data Assimilation to Improve the Short Range Prediction of Indian Summer Monsoon.
2	Paromita Chakraborty	NCMRWF	NEPS-G forecast Skill of Indian Summer Monsoon 2018.
3	T. Arulalan	NCMRWF	Prediction of Western Disturbances Tracks using NEPS.
4	Buddhi Prakash Jangid	NCMRWF	Quantifying the differences in the ensemble forecastsduring calm and perturbed weather conditions.
5	Dr. Sujata Pattanayak	NCMRWF	Verification of NCMRWF Global Data Assimilation System.
6	Abhishek Lodh	NCMRWF	ASCAT Soil Moisture Assimilation in NCUM Regional NWP System.
7	M. T. Bushair	NCMRWF	Impact of flow dependency in deterministic analysis and forecast.

Day 2: Theme - DA/Convective Ensemble/Seasonal forecast			
Sl. No.	***Name of Author***	***Affiliation***	***Poster Title***
1	Mr. Rajendra Singh Rawat	GBPNIHESD	Investigation of rainfall vertical structure and rainfall induced erosivity over a Garhwal Himalayan station using in-situ observation and modeling
2	S. Kiran Prasad	NCMRWF	Probabilistic forecasting of extreme weather events by NCMRWF ensemble prediction systems.
3	K Vijaya Kumari	S V University	Impact of assimilation of SCATSAT-1 wind data on simulation of tropical cyclones over Bay of Bengal.
4	Ms. Shruti Verma	BHU, Varanasi	Performance assessment of REGional Climate Model for Indian summer monsoon rainfall during ENSO.
5	Ananya Karmakar	NCMRWF	Assessment of BoB Upper Ocean features in NCMRWF NEMO.
6	Saheed P. P.	NCMRWF	Sea ice forecast for polar region using coupled model.

Day 3: Theme - Application			
Sl. No.	***Name of Author***	***Affiliation***	***Poster Title***
1	Babitha George	IIST, Trivandrum	An Ensemble-Based Analysis of Two Extreme Rainfall Events over Kerala.
2	M. Sateesh	NCMRWF	Nowcasting Products Using Satellite and Global NWP Data.
3	Sushant Kumar	NCMRWF	NCMRWF Data Product for Renewable Energy Applications.
4	Harvir Singh	NCMRWF	Bias Correcting the High Resolution Ensemble Forecast for Heatwave Prediction over India and its Verification.
5	S. Karunasagar	NCMRWF	Extremely Heavy Rainfall (EHR) over Mumbai during 2019: Observations and Model Forecasts.
6	Sakila Saminathan	IIT, Palakkad	Improving Short to Medium Range Precipitation Forecasts in India using Analog Approach.
7	Kuldeep Sharma	NCMRWF	Improved Skill in Predicting Extreme Rains over Complex Terrain in India during recent Years.