Location: Abu Dhabi, UAE
Date: 9-11 September 2025

AI for Weather Prediction: Advances, Challenges & Future Outlook

Local Time	Bridging Perspectives	From Insights to Operations	Committing to a Next Step
	9/9/2025 (Tue)	10/9/2025 (Wed)	11/9/2025 (Thu)
9:00-9:30	Registration	S6-Opportunities for Capacity Development	S10-Reporting Back of Break Out Groups
9:30-10:00	S1-Opening Ceremony Photo		
10:00-10:30			
10:30-11:00	Health Break & Networking	Tour of National Center of Meteorology	Health Break & Networking
11:00-11:30	S2-Earth System Prediction: Current AI/ML Development Pathways		Scientific presentation - ECMWF, NCM, ECCC and RA V (Dr Neil Gordon)
11:30-12:00			
12:00-12:30		Lunch	
12:30-13:00	Lunch		Lunch
13:00-13:30		S7-Making Regulatory Frameworks Fit for Purpose	
13:30-14:00	S3- Service Implications (13:30 – 14:45)		
14:00-14:30			S11-Agreement of Conference Statement
14:30-15:00	S4- Data Requirements and Supporting Infrastructure (14:45 – 16:15)	Health Beak and Networking	
15:00-15:30		S8-Break-out Session – Opportunities and Benefits S9-Break-out Session – Solution to Barriers	
15:30-16:00			S12-Closing Remarks and Thanks
16:00-16:30	Health Break & Networking (16:15 – 16:45)		
16:30-17:00	S5-Explainability, Interpretability and Evaluation (16:45 – 18:00)		
17:00-17:30			
17:30-18:00			
19:00 – 21:00	Conference Dinner		

DAY ONE – 9th September 2025		
Session (duration)	**Structure/Brief**	**Presenters**
S1 – Opening Ceremony (60 mins)	1. **WMO President** Welcome Remarks 2. **WMO DSG** Welcome Remarks 3. **WMO RAII** President Remarks 4. **Setting the Scene: AI-WP Malawi Pilot, Dr. Roar Skålin and Mr. Amos Mtonya (15 min)** 5. Charge to the participants: Key objectives and questions, **Session Chair (15 min)**	**Chair – Facilitator: Dr. Anthony Rea** **Speakers:** • WMO President, Dr Abdulla Al Mandous • WMO Deputy Secretary-General, Ms. Ko Barrett • WMO RAII President, Dr. Ayman bin Salem Ghulam • Director General of Met Norway, Dr. Roar Skålin • Deputy Director of Engineering and Communications at DCCMS, Mr. Amos Mtonya
Setting the Scene		
S2 – Earth System Prediction: Current AI/ML Development Pathways (90 mins)	AI/ML is opening new frontiers in Earth system prediction with collaborative efforts across academia, operational agencies, startups and global tech companies shaping new developments and the potential to accelerate deployment and scaling in developing countries. The session will focus on how partnerships are functioning and structured, how progress is happening, and what conditions are enabling scalable, sustainable advances in AI/ML for Earth system prediction.	**Chair – WMO Science and Innovation Director, Dr. Véronique Bouchet** Participants: 1. ***Dr. Wessel Bruinsma (joint keynote)*** 2. ***Dr. Kenji Takeda, Microsoft (joint keynote)*** 3. Ms. Monica Youngman, US National Weather Service 4. Dr. Karthik Kashinath, NVIDIA 5. Dr. Roar Skålin, MET Norway 6. Prof. Florian Pappenberger, ECMWF 7. Mr. Radenko Pavlovic, Environment and Climate Change Canada
S3-Service Implications (75 mins)	The session will focus on the Services' implications of integrating AI/ML into operational workflows, the role of human expertise in validating and contextualizing outputs, and how to maintain trust, accessibility, and inclusivity for diverse user communities. By examining the human factor — from forecasters and service providers to the decision-makers and citizens who depend on these services.	**Chair – WMO SERCOM President, Mr. Ian Lisk** Participants: 1. ***Dr. Grey Nearing, Google (keynote)*** 2. Mr. Amos Mtonya, DCCMS 3. Dr. Patrick Kinyua Gikunda, ACMAD 4. Dr. Neil Gordon, WMO Members community 5. Dr. Hyesook Lee, KMA 6. Prof. Vladan Babović, University of Singapore 7. Mr. Al-Baraa bin Sami Khayat, NCM Saudi Arabia

S4-Data Requirements and Supporting Infrastructure (90 mins)	AI/ML-based Earth system prediction depends on diverse, high-quality datasets — from in-situ meteorological observations to satellite imagery, IoT sensors, and geospatial information. The used infrastructure for data exchange and platform is not same to those for NWP. The session will examine how the requirements of data and infrastructure evolve to enable and facilitate the AI model developments and validation, and how to ensure access, quality, and interoperability.	**Chair – WMO Infrastructure Director, Mr. Nir Stav** Participants: 1. Mr. Rei Goffer, Tomorrow.io 2. Mr. Ashish Raval, Synoptic Data 3. Dr. Pascal Waniha, WMO INFCOM 4. Dr. Paolo M. Ruti, EUMETSAT 5. Dr. Naseema Beegum Shyju, Space42 6. Mr. Julian Green, Brightband 7. Ms. Monica Youngman, US National Weather Service
S5-Explainability, Interpretability and Evaluation (75 mins)	As AI/ML become central to Earth system prediction, and mission-critical applications, where decisions impact lives and livelihoods, trust in AI systems and how they are developed becomes paramount. How can we have confidence that AI/ML tools are doing the right things for the right reasons? How do we verify and evaluate their reliability? How do differences in mandates, incentives, and innovation cultures between public and private actors influence approaches to transparency, openness, and contribution to the broader community? The session will explore the challenges and opportunities in making AI models interpretable and trustworthy.	**Chair – WMO Scientific Advisory Panel Chair, Dr. Stephen Belcher** Participants: 1. ***Dr. Johannes Schmude, IBM (keynote)*** 2. Dr. David John Gagne, NCAR 3. Dr. Natacha Bernier, Météo-France 4. Prof. Florian Pappenberger, ECMWF 5. Prof. Pedram Hassanzadeh, University of Chicago 6. Dr. Catherine de Burgh-Day, Australian Bureau of Meteorology 7. Dr. Kanghui Zhou, CMA
DAY TWO – 10th September 2025		
Exploring Opportunities and Challenges		
S6-Opportunities for Capacity Development (90 mins)	AI/ML offers an unprecedented chance to bridge gaps in forecasting capacity. The session explores how AI is changing realities on the ground in specific contexts and asks how sustainable progress can be achieved. The discussion will reflect on the different roles and responsibilities of public and private actors, and how their partnerships can be leveraged to accelerate the	**Chair – WMO Deputy Secretary-General, Ms. Ko Barrett** Participants: 1. ***Mr. Abiola Abayomi Okanlawon, Nigerian Meteorological Agency (keynote)*** 2. Dr. Chris Horvat, Brown University 3. Dr. Mariam Tidiga, Burkina Faso National Meteorological Agency 4. Mr. Kevin White, Microsoft

	deployment and scale-up of sustainable, long-term capacity equitably across regions.	5. Dr. Alan James Peixoto Calheiros, INPE, Brazil 6. Dr. Niall Robinson, NVIDIA 7. Prof. Hosni Ghedira, Expert in AI and Engagement	
S7 - Making Regulatory Frameworks Fit for Purpose (90 mins)	The rapid evolution of AI is outpacing many of the regulatory and governance structures that oversee weather and climate services. Panellists will share perspectives from operational agencies, private-sector innovators, and global governance bodies on how to align standards across sectors, and how to ensure regulations work in diverse contexts, from high-capacity nations to developing countries, and across the variety of actors. The discussion will also examine the role of multilateral coordination in setting common principles, the need for interoperability between jurisdictions, and the balance between promoting open innovation and protecting sensitive infrastructure and information.	**Chair –WMO Second Vice-President, Mr. Eoin Moran** Participants: ***1. Mr. Jinjun Pan, CMA (keynote)*** 2. Mr. Ian Lisk, WMO SERCOM 3. Prof. Christof Appenzeller, MeteoSwiss 4. Dr. Prashanth Marpu, Space42 5. Mr. Kenneth Mylne, ET-OWFS, INFCOM, WMO 6. Mr. Joshua Campbell, HMEI 7. TBD	
S8-Break-out Session – Opportunities and benefits (90 mins)	Attendees split into groups with a mandate to discuss the common ambitions of different sectors and actors, what they aim to advance, and the sustainable, autonomy-enabling and equitable pathways to scaling up innovations and accelerating its deployment.	**Chair – Facilitator: Dr. Anthony Rea**	
S9-Break-out Session – Solution to Barriers (90 mins)	Building on the opportunities and ambitions identified in Session 8, this session shifts focus to the practical solutions needed to overcome barriers that constrain the realisation of these ambitions. Participants will work in breakout groups to produce actionable recommendations.	**Chair – Facilitator: Dr. Anthony Rea**	
DAY THREE – 11th September 2025			
Towards a Collaborative Future			
S10-Reporting back of break out groups (90 mins)	Each rapporteur to report out headline conclusions	**Chair – Facilitator: Dr. Anthony Rea**	

S11-Agreement of Conference Statement (90 mins)		**Chair 1 – WMO Second Vice President, Mr. Eoin Moran** **Chair 2 - TBD**	
S12–Closing and thanks (20 mins)		**WMO President, Dr. Abdulla Al Mandous** **WMO Deputy Secretary-General, Ms. Ko Barrett**	