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PROGRAMME

(25 October 2023)



WORLD CLIMATE RESEARCH PROGRAMME OPEN SCIENCE CONFERENCE

23 - 27 OCT. 2023 | RWANDA



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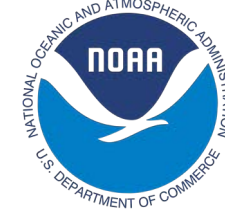


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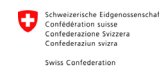
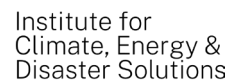
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CONFERENCE THEMES

Theme 1: Advances in Climate Research

Theme leads

- **Regina Rodrigues** - Federal University of Santa Catarina, Brazil
- **Rowan Sutton** - University of Reading, UK
- **Orli Lachmy** - Open University of Israel, Israel

Showcasing progress and future challenges in understanding Earth's climate system, and advances in climate science capacity around the world.

Sessions will cover, inter alia, climate processes; gaps identified by IPCC; energy, water and carbon cycles; climate modelling, observations and model-data fusion.

These sessions will be of key interest to the WCRP Core Projects (CliC, CLIVAR, ESMO, GEWEX, SPARC, RifS), Explaining and Predicting Earth System Change (EPESC) and Digital Earths, as well as partner projects such as AIMES, SOLAS and PAGES. This is also a good opportunity for those not involved in any of these projects to know more about the science associated with them.

- S01** Climate variability on timescales from weeks to centuries and millennia
- S02** Climate predictability and prediction
- S03** Global and regional monsoons
- S04** Storms, eddies and jets in the atmosphere and ocean
- S05** Polar processes and change
- S06** Rapid and/or irreversible changes in the climate system
- S07** Atmosphere-land interactions: energy, water & carbon
- S08** Ocean-atmosphere interactions: energy, water & carbon
- S09** Interactions between atmospheric composition and climate, including aerosol processes
- S10** Lessons from paleoclimate for recent and future climate change
- S11** Advances in global and regional climate modelling
- S12** Advances in climate observations and model-data fusion



Theme 2: Human Interactions with Climate

Theme leads

- **Lisa Alexander** - University of New South Wales, Australia
- **Pierre Friedlingstein** - University of Exeter, UK
- **Izidine Pinto** - Royal Netherlands Meteorological Institute, The Netherlands

Analyzing key drivers and impacts of climate change (past, current and future), identifying risks to human and ecosystem health. Sessions will cover, inter alia, climate extremes and associated risks and impacts; water availability, food, ecosystems, health and cities in a changing climate.

These sessions will provide opportunities for the WCRP Core Projects and Lighthouse Activities to interact and build collaborations with sister projects in Future Earth. This is also a good opportunity for those not involved in any of these projects to know more about the science associated with them.

- S13** Carbon cycle
- S14** Global energy budget
- S15** Water cycle
- S16** Ice sheets and sea level change
- S17** Climate feedbacks and climate sensitivity
- S18** Current and future forcing, including aerosols and scenarios
- S19** Land use and land cover change
- S20** Impacts on land and marine ecosystems
- S21** Impacts on food security and water availability
- S22** Impacts on human health and urban systems
- S23** Circulation change in the climate system (atmosphere and ocean)
- S24** Attribution of changes
- S25** Regional climate change
- S26** Mitigation scenarios including overshoot and climate intervention



Theme 3: Co-produced Climate Services and Solutions

Theme leads

- **Cathy Vaughan** - USAID, USA
- **Bruce Hewitson** - University of Cape Town, South Africa
- **Mouhamadou Bamba Sylla** - AIMS, Rwanda

Connecting scientific knowledge, planning, decision-making and policy processes. Sessions will cover, inter alia, near-term regional and climate change information for adaptation and mitigation; climate scenarios; climate intervention research.

These sessions will be of key interest to projects such as the WCRP-led Regional Information for Climate (RIfS), My Climate Risk and Safe Landing Climate, WCRP Core Projects, as well as other regional climate research activities, climate services and policy makers. This is also a good opportunity for those not involved in any of these projects to know more about the science associated with them.

- S27** Hazards and extreme events
- S28** Regional information – Data and methods
- S29** Regional information – Constructed for climate services
- S30** Plausibility, probability, likelihood, and uncertainty
- S31** Climate knowledge co-production in a decision and policy context
- S32** Capacity development for climate services
- S33** Linking policy and climate information
- S34** Climate services: effectiveness and evaluation
- S35** Regional information and scales in time and space
- S36** Observations for decisions
- S37** Regional attribution
- S38** Connecting regional impacts and climate information
- S39** Institutions and frameworks
- S40** Lessons from failures

Day 1: Monday 23 October

Time	Session	Room	Description
From 7h30			Badges and conference materials collection <i>(from Sunday 22 October at 13:00)</i>
9:00 - 10:00	Plenary in the Dome	DOME	<p>Opening of the Conference <u>Chairs:</u> Detlef Stammer and Helen Cleugh <i>(Conference Chairs)</i></p> <p>09:00-09:20 - Welcoming and Opening Remarks</p> <ul style="list-style-type: none"> • Helen Cleugh <i>(Co-Chair of SOC):</i> Welcome to the Open Science Conference from WCRP • Gaspard Twagirayezu <i>(Minister of Education, Rwanda) (TBC)</i> • Amina Mohammed <i>(Deputy Secretary-General of the United Nations and Chair of the United Nations Sustainable Development Group) – Remotely</i> • Petteri Taalas <i>(World Meteorological Organization Secretary-General)</i> • Jeanne d'Arc Mujawamariya <i>(Minister for Environment, Rwanda)</i> <p>09:20-09:50 - The Urgent Need for Climate Action</p> <ul style="list-style-type: none"> • 09:20 - Macharia Kamau <i>(Special Envoy of former President Uhuru Kenyatta on the EAC-led Peace Effort on Eastern DRC and Commissioner, Office of the Former President of the Republic of Kenya; International Science Council):</i> Sustainable development goals perspective: The urgent need for accelerated action on SDGs to drive global climate action • 09:30 - Lina Yassin <i>(Researcher - Climate Change, International Institute for Environment and Development):</i> Leveling the playing field: The crucial role of climate science in empowering vulnerable nations • 09:40 - Detlef Stammer <i>(WCRP Chair):</i> Climate change: A challenge for the World <p>09:50-10:00 - WCRP Open Science Conference Overview - Conference Chairs</p>
10:00 - 10:30	Break		Tea and coffee break
10:30 - 12:30	5 Parallel Sessions	DOME	<p>S15: Water cycle <u>Convenors:</u> Moussa Diakhaté, Jan Polcher, Dewi Kirono, Marie-Amélie Boucher</p> <ul style="list-style-type: none"> • 10:30 - Hervé Douville <i>(Keynote) - Remotely:</i> Water remains a blind spot in climate change policies • 10:50 - Sujay Kumar <i>(Keynote):</i> Two decades of global water cycle variability – non-stationarity assessed by land remote sensing synthesis • 11:10 - Julie Collignan - Method to identify and quantify the effect of climatic and non-climatic drivers on river discharge in Europe

Day 1: Monday 23 October

Time	Session	Room	Description
			<ul style="list-style-type: none"> • 11:20 - Isla Simpson: A global discrepancy between models and observations in atmospheric humidity trends over arid and semi-arid regions • 11:30 - Morgane Lalonde: Is the urban effect on precipitation significant? • 11:40 - Xinyang Fan: Groundwater depletion in Australia due to climate change • 11:50 – Assoumana Bodian - Remotely: Contribution of satellite data for the knowledge of water resources in West Africa • 12:00 - Dionisio Pérez-Blanco: Socio-ecological ensemble forecasting. Insightful results from complex human-water system • 12:10 - Discussion
		MH1	<p>S01: Climate variability on timescales from weeks to centuries and millennia Convenors: Mat Collins, Lisa Alexander and Nicola Maher</p> <ul style="list-style-type: none"> • 10:30 - Marisol Osman (Keynote): Exploiting large ensembles to understand the combined influence of ENSO and other climate drivers on the Southern Hemisphere extratropical circulation • 10:50 - Samson Hagos: East African monsoon as a drawbridge for the circumnavigation of Madden-Julian oscillation events • 11:00 - Audryck Nzeudeu Siwe: Study of the impact of intraseasonal oscillations on water vapor transport in Central Africa: the case of 25/70 day oscillations • 11:10 - Julie Arblaster (Keynote): Tropical to extratropical interactions • 11:30 - Jin-Yi Yu: The 21st-Century ENSO: Its changing properties, dynamics, and impacts • 11:40 - Dickson Mbigi: Southern Annular Mode: a new factor impacts the East African short rains after the early 1990s • 11:50 - Masa Kageyama (Keynote): Using past climate information and simulations can help projecting future climates • 12:10 - Isma Abdelkader Di Carlo: Holocene evolution of the tropical variability at interannual scale and the evolution of the mean climate in the Pacific Ocean • 12:20 - S. Anjana: Role of oceanic internal instability in the generation of low-frequency variability in the Indian Ocean
		MH2	<p>S29: Regional information – Constructed for climate services Convenors: Elisabeth Thompson and Alexander Ruane</p> <ul style="list-style-type: none"> • 10:30 - Carlo Buontempo (Keynote): On the operationalisation of climate services -The experience of the Copernicus Climate Change Service (C3S) and the potential of Destination Earth (DestinE) • 10:50 - Lisa Alexander (Keynote): Climate information for climate action: the important role of scientific research • 11:10 - Mouhamadou Bamba Sylla (Keynote): Climate change information for climate services to support adaptation in Africa • 11:30 - Bethany Ellis - Remotely: A climate impact assessment framework for primary industries • 11:40 - Amy Doherty: Assessing regional climate risks in Africa and Asia: a case study of interdisciplinary integration and knowledge sharing • 11:50 - Olivier Crespo: FAO-CAVA: a user-driven platform for global agricultural adaptation action • 12:00 - Teferi Demissie: Combining local and expert knowledge to understand and coproduce accurate and useful information on rainfall characteristics in Ethiopia and Tanzania • 12:10 - Discussion

Day 1: Monday 23 October

Time	Session	Room	Description
		MH3	S24: Attribution of changes Convenors: Izidine Pinto, Sarah Perkins-Kirkpatrick and Joyce Kimutai <ul style="list-style-type: none"> 10:30 - Mark New (Keynote): Attribution of Socio-economic Impacts of Extreme Events: Challenges and Opportunities 10:50 - Friederike Otto (Keynote) - Remotely: Challenges and opportunities in rapid event attribution 11:10 – Sarah Perkins-Kirkpatrick: Attributing the health impacts of the 2009 Victorian heatwave to climate change 11:25 - François Engelbrecht: Climate change and the Durban floods: the need for attribution science in the Global South 11:40 - Samantha Burgess: Extreme event attribution protocols for a climate service 11:55 - David Benson - Remotely: Developing NOAA’s rapid attribution capability and understanding the causes and mechanisms of extreme events 12:10 - Discussion
		MH4	S39: Institutions and frameworks Convenors: Judith Mulwa, Christopher Hewitt, Carlo Buontempo and Madeleine Thomson <ul style="list-style-type: none"> 10:30 - Birgit Hassler: Climate Model Benchmarking for CMIP7 – a CMIP task team 10:45 - Ardhasena Sopaheluwakan: Progress and challenges of climate services implementation in Indonesia 11:00 - François Engelbrecht: The WMO Integrated Processing and Prediction System (WIPPS): towards seamless access to Earth System Predictions 11:15 - Sarah Octenjak - Remotely: Co-production of a climate service roadmap for smallholder farming communities: a case study of Urok islands in Guinea-Bissau 11:30 - Richard G. Jones: The IPCC AR6 Interactive Atlas and its evolution towards Copernicus 11:45 - Roger Pulwarty: The Climate Services Information System – Empowering a climate-smart World 12:00 - Nicola Golding - Remotely: Developing National Frameworks for Climate Services (NFCSS): requirements, experiences and challenges from across Europe and beyond 12:15 - Gerald Guala: Open Science for Climate at NASA
12:30 - 14:00	Lunch session 12h50-13h50: Townhalls, Learning Labs, Workshops	MH2	TH02: Global Precipitation Experiment (GPEX): What is it and how to get involved
		AD10	TH09: Community discussion on balancing data-intensive and other foundational climate research activities
		AD11	WM03: Smart sensors for agri-food and environmental monitoring systems
		AD12	WM04: CGIAR ClimBeR Early Warning Early Action Early Finance (AWARE) Platform initiative
		MH1	TH14: Equitable access to climate modelling data
		MH3	GA01: Journey of a Kigali Pixel - Game (Part 1)
14:00 - 16:00	5 Parallel Sessions	DOME	S22: Impacts on human health and urban systems Convenors: Kristie Ebi, Sari Kovats and Negin Nazarian

Day 1: Monday 23 October

			<ul style="list-style-type: none"> 14:00- Brama Kone (Keynote) - <u>Remotely</u>: Health risks of climate change in the WHO AFRO region - what are our research priorities? 14:20 - Fei Chen (Keynote): Coordinated research on extreme precipitation in multiple urban systems 14:40 - Rosa von Borries & Joy Shumake: Climate Services for Health Protection: Global Status and Opportunities 14:52 - Eniola Olaniyan: Predicting Malaria Hyper Endemic zones in West Africa Using a Regional Scale Dynamical Malaria Model 15:04 - Malebo Makunyane - <u>Remotely</u>: Effect modification of the association between temperature variability and hospital admissions by season and weather types in Cape Town, South Africa (Withdrawn) 15:16 - Solomon Tesfamariam: Spatio-temporal analysis of urban heat Island (UHI) and its effect on urban ecology: The case of Mekelle city, Northern Ethiopia. 15:28 - Genito Maure: Testing predictability of malaria outbreaks in Mozambique with Machine Learning 15:40 - Discussion
		MH1	<p>S14: Global energy budget Convenors: Sonia Seneviratne, Graeme Stephens and Benoit Meyssignac</p> <ul style="list-style-type: none"> 14:00 - Piers Forster (Keynote): Effective radiative forcing on climate, building from the IPCC AR6 Assessment 14:20 - Maria Z. Hakuba (Keynote) - <u>Remotely</u>: On the future of Earth radiation and energy imbalance measurements 14:40 - Benoit Meyssignac: Trends, variability and uncertainty in Earth's Energy Imbalance over the last two decades 14:55 - Lijing Cheng: Heat stored in the Earth system 1960-2020: Where does the energy go? 15:10 - Sandrine Bony: Impact of the mesoscale organization of deep convection on the Earth's Radiation Budget: Observations and Global Cloud Resolving Model Simulations 15:25 - Ryan Kramer - <u>Remotely</u>: Using observations of radiative forcing to interpret climate trends 15:40 - Shiv Priyam Raghuraman - <u>Remotely</u>: Understanding observed changes in cloud radiative effect using climate and radiation models 15:50 - Discussion
		MH2	<p>S02: Climate predictability and prediction Convenors: Willem Landman, June-Yi Lee, Marisol Osman and Noel Keenlyside</p> <ul style="list-style-type: none"> 14:00 - Debra Hudson (Keynote) - <u>Remotely</u>: S2S research, applications and future challenges: An Australian perspective 14:20 - Doug Smith (Keynote): Seasonal to decadal prediction: some challenges and opportunities 14:40 - Magdalena Balmaseda: Seasonal forecasting in a changing climate: Where are we heading? 14:52 - Grant Smith: Sea level prediction to prepare for the months ahead – a small island perspective 15:04 - Luciano Andrian - <u>Remotely</u>: Impacts of the IOD and its combined action with the ENSO on the springtime climate in South America 15:16 - Patience Mulovhedzi: Advances in model development at the South African Weather Service 15:28 - Adnan Abid - <u>Remotely</u>: Predictability of Indian Ocean precipitation and its North Atlantic teleconnections during early winter 15:40 - Discussion

Day 1: Monday 23 October

		MH3	<p>S37: Regional attribution Convenors: Amadou T. Gaye and Rupert Stuart-Smith</p> <ul style="list-style-type: none"> 14:00 - André Kamga Foamouhoue (Keynote): State of climate for Africa: Precipitation and temperature related extremes and trends 14:15 - Sihan Li (Keynote) - Remotely: Attribution of weather and climate extremes and climate change impacts: A regional perspective 14:30 - Paul-Arthur Monerie: A zonal contrast in future changes in Sahel precipitation 14:45 - Gabi Hegerl (Keynote): Informing climate risk using the historical record and regional attribution results 15:00 - Daithi Stone - Remotely: The social psychological attribution of event attribution 15:10 - Douglas Maraun: Challenges in using event storylines for impact attribution. The example of a severe landslide event in Austria 15:20 - Ismaila Diallo: Diagnosis of Drivers and physical processes of extreme wet and dry events over West Africa using RegCM4 multi-model ensemble 15:30 - Pandora Hope - Remotely: Adding context – attribution information for climate services 15:40 - Discussion
		MH4	<p>S34: Climate services: effectiveness and evaluation Convenors: Andrew Robertson, Anna Steynor and Geneva List</p> <ul style="list-style-type: none"> 14:00 – <i>Convenors' overview</i> 14:10 - Emma Visman (Keynote): Whose values count? The power of principled metrics in shaping investments in climate resilience 14:30 - Brian Chiputwa (Keynote): A Mixed-methods approaches for evaluating the effectiveness of weather and climate information 14:40 - Alexia Kioko: Sectoral impact assessment of seasonal rainfall forecast over Greater Horn of Africa 14:50 - Peter Johnston: Seasonal forecasts may not always be skilful, but they can be useful - an agricultural perspective 15:00 - Muhammad Abdur Rahaman: Capturing effectiveness of climate information services and sustainable community-based early actions for climate resilience and disaster risk reduction in Bangladesh: An analysis from flood-prone areas 15:10 - Francisco Doblas-Reyes: Climateurope2: Supporting and standardising climate services in Europe and beyond 15:20 - Meshel Muzuva: Assessing the effectiveness and evaluation of climate services in banks 14:30 - Discussion
16:00 - 18:00	Posters & Refreshments		<p>Live poster session at KCC</p> <ul style="list-style-type: none"> Sessions: S01, S02, S14, S15, S22, S24, S29, S34, S37, S39 Poster Clusters: PC01, PC02, PC03, PC05, PC06, PC07, PC08, PC09, PC10, PC30

Day 1: Monday 23 October

16:15-17:45	Forum	FORUM	<ul style="list-style-type: none"> 16:15-16:35 - Jack A. Kaye (NASA HQ Earth Science Division): How space-based observations advance our knowledge of a changing Earth and inform action 16:35-16:45- Yousouph Sane (Agence Nationale de l'Aviation Civile et de la Météorologie (ANACIM) of Senegal): A web portal dedicated to climate change impact studies in the Global South 16:45-17:00 - Ivan Gasangwa (Rwanda Forestry Authority): Nation-wide mapping and monitoring of tree-level impact from landscape restoration initiatives 17:00-17:15 - Lauren Stuart (World Meteorological Organization): United in Science 2023: A multi-organization high-level compilation of the latest weather-, climate- and water-related sciences and services for sustainable development 17:15-17:30 - Joseph Sebaziga (Meteo Rwanda) : Observed changes in onset and cessation of seasonal rainfall over Rwanda during the last four decades 17:30-17:45 - Valentina Rabanal (Servicio Meteorologico Nacional de Argentina): Young Earth system Scientists (YESS)
18:00 - 18:45	Plenary in the Dome Evening dialogue		<p>The needs of, and opportunities for the Global South <u>Chair:</u> Juliet Kabera (Director General, Rwanda Environmental Management Authority)</p> <ul style="list-style-type: none"> 18:00 - Barend Erasmus (Dean of the University of Pretoria's Faculty of Natural/Agricultural Sciences): Emerging trends and opportunities for climate action in Africa (Title to be confirmed) 18:15 - Carlos Nobre (Senior researcher, Institute of Advanced Studies, University of Sao Paulo, Brazil) - <u>Remotely</u>: The needs of, and opportunities for, the Amazon 18:30 - Discussion
From 18:45	Free time		Ice breaker
20:00 - 22:00	Evening Session Townhalls, Learning Labs, Workshops	AD12	LL02: Open Earth System Science in Cloud (starts at 19:00)
		AD10	LL03: Journey of a Kigali Pixel – Masterclass
		MH4	LL04: CMIP and CORDEX analysis and evaluation tools
		MH2	TH03: Early-mid career perspectives on South-North inequalities: fair collaborative research as a way of reducing them
		MH1	TH04: Schmidt Futures Virtual Earth Systems Research Institute Short talk Series
		MH3	WM05: Open Science and Peer Review- Towards a Stronger Evidence Base

Day 2: Tuesday 24 October

Time	Session	Room	Description
8:30 - 10:00	Plenary in the Dome	DOMÉ	<p>08:30-09:15 – Human Interactions with Climate <u>Chair: Heide Hackman</u> (Director of Future Africa and Strategic Advisor on Transdisciplinarity and Global Knowledge Networks at the University of Pretoria, South Africa)</p> <ul style="list-style-type: none"> 08:30 – Tasneem Essop (Executive Director, Climate Action Network – International) - <u>Remotely</u>: How to deal with climate extremes, especially in terms of inequality and climate injustice 08:45 – Saleemul Huq (Director International Centre for Climate Change and Development, Independent University Bangladesh) - <u>Remotely</u>: Attribution of climate change, especially in the Global South and in support of Loss and Damage (<i>Withdrawal</i>) 09:00 – Aromar Revi (Director, Indian Institute for Human Settlements – IIHS) - <u>Remotely</u> (TBC): Building a bridge between climate science and accelerated climate action <p>09:15-09:45 – Panel discussion: Human Interactions with Climate – a dialogue covering behavioral, social, economic and political dimensions <u>Moderator: Mercedes Bustamante</u> (Professor, University of Brasilia and Coordination of the Improvement of Higher Education Personnel, Brazilian Ministry of Education)</p> <p><u>Panelists</u></p> <ul style="list-style-type: none"> Laurice Jamero (Climate Change, Adaptation and Resilience Expert – Klima Laboratory, Manila Observatory and Asia Foundation Development Fellow) Osvaldo Moraes (Director of Climate and Sustainability of the Brazilian Ministry of Science and Technology) - <u>Remotely</u> Ousmane Ndiaye (Director of Meteorology of the Senegal National Agency for Civil Aviation and Meteorology – ANACIM) - <u>Remotely</u> Flavien Joubert (Minister for Agriculture, Climate Change and Environment of Seychelles) - <u>Remotely</u>
10:00 - 10:30	Break		Tea and coffee break

DAY 2: Tuesday 24 October

Time	Session	Room	Description
10:30 - 12:30	5 Parallel Sessions	DOME	<p>S06: Rapid and/or irreversible changes in the climate system Convenors: Thomas Stocker, Katrin Meissner and Krishna Achuta Rao</p> <ul style="list-style-type: none"> 10:30 - Soon-Il An (Keynote) - <u>Remotely</u>: Hysteresis and irreversibility in a climate system 10:50 - Anastasia Romanou (Keynote): The role of internal variability and feedbacks controlling AMOC stability 11:10 - Niklas Boers (Keynote) - <u>Remotely</u>: Earth system tipping points and how to anticipate them 11:30 - Katinka Bellomo: Influence of the Atlantic Meridional Overturning Circulation on future climate change impacts 11:40 - Chao Li: The stability of Atlantic Meridional Overturning Circulation and its impact on climate reversibility in a future warm climate 11:50 - Selma Bultan – <u>Remotely</u>: Disentangling the contribution of environmental stress and land-use to abrupt Amazon rainforest dieback events 12:00 - Reyk Börner: Predicting most probable transition paths of the Atlantic Meridional Overturning Circulation 12:10 - Frank Kwasniok - <u>Remotely</u>: Data-driven anticipation and prediction of Atlantic Meridional Overturning Circulation collapse using non-stationary spatiotemporal dynamical modelling 12:20 - Discussion
		MH1	<p>S13: Carbon cycle Convenors: Galen McKinley, Pedro Monteiro and Ana Bastos</p> <ul style="list-style-type: none"> 10:30 - Pep Canadell (Keynote): What have we learned about the carbon cycle in the past 10 years? 10:45 - Kirsten Zickfeld (Keynote) - <u>Remotely</u>: Investigating the carbon cycle response in low emissions scenarios 11:00 - Junjie Liu (Keynote) - <u>Remotely</u>: Detecting the impact of extreme climate events on terrestrial biosphere carbon cycle from space 11:15 - Precious Mongwe (Keynote): Regime change in the mechanism of CO₂ uptake in the Southern Ocean under high emission scenario 11:30 - Pierre Friedlingstein - <u>Remotely</u>: The CO₂ fertilization strength and the ecosystem turnover time are the key controls of the magnitude of the global land carbon sink. 11:40 - Benjamin Gaubert: Neutral tropical African CO₂ exchange estimated from aircraft and satellite observations 11:50 - Yiqi Luo: Efficacy of terrestrial carbon dioxide removal from the atmosphere 12:00 - Lydia Keppler - <u>Remotely</u>: Mapped Observation-Based Oceanic Dissolved Inorganic Carbon (MOBO-DIC): Recent trends and variability 12:10 - Damien Couespel: Re-emergence of anthropogenic carbon from the ocean 12:20 - Alicia Karspeck: Quantifying marine carbon dioxide removal
		MH2	<p>S40: Lessons from failures Convenor: Bruce Hewitson</p>

DAY 2: Tuesday 24 October

Time	Session	Room	Description
			<ul style="list-style-type: none"> • 10:30 - Bruce Hewitson (Keynote): F(r)iction and Friendship: partnerships in Africa between the global north and south • 11:00 - Oratilwe Khoza (Keynote): International best practices for climate risk resilience in African developing countries • 11:30 - Ryan O'Loughlin - Remotely: The value of error and failure in climate modeling: a philosophical perspective • 11:45 - Maria Inez Angela Z. Ponce De Leon - Remotely: The disconnect between plans and practice: case studies in risk communication for extreme rainfall and flooding events • 12:00 - Gilbert Siame: Avoiding maladaptation in cities by bridging climate science and mundane urban climate risk drivers in Africa • 12:15 -Discussion
		MH3	<p>S21: Impacts on food security and water availability Convenors: Chris Lennard, Elisabeth Vogel and Addisu Semie</p> <ul style="list-style-type: none"> • 10:30 - Chris Funk (Keynote): Thinking beyond the mean – How taking an extreme view on climate change empowers prediction • 10:50 - Arame Tall (Keynote) - Remotely: Rethinking Africa climate services: Opportunities for strengthening resilience and sustainability • 11:10 - Alexander Ruane (Keynote): Non-linear climate change impacts on crop yields may misinform stakeholders • 11:30 - Jonas Jaegermeyr: Climate change impacts on global crop productivity and its nutritional value • 11:45 - Katharina Waha: Climate variability, droughts, and temporal yield stability in Ethiopia. • 12:00 - Liz Mung'atia: The triple nexus of climate, food and water • 12:15 - Sunil Bista: Appraising the impact of climate change on irrigation water requirement, ground water recharge and crop yield in the rainfed river basin

DAY 2: Tuesday 24 October

Time	Session	Room	Description
		MH4	S11: Advances in global and regional climate modelling Convenors: Bjorn Stevens, Ruby Leung and Tianjun Zhou <ul style="list-style-type: none"> • 10:30 - François Engelbrecht (<i>Keynote</i>): An African-based Earth System model: verification of land-atmosphere fluxes • 10:50 - Veronika Eyring (<i>Keynote</i>): Improving Earth System Model Parametrizations with Machine Learning • 11:10 - Nicolas Gruber (<i>Keynote</i>): Toward a Python-based computing and data platform for kilometer-scale weather and climate modeling • 11:30 - Laure Zanna: Climate Modeling with Machine Learning: Hype or Reality? • 11:40 - Silvina Solman: On the ability of convection permitting models to capture the urban-rural contrasts over selected cities in South America • 11:50 - Amrapalli Garanaik: Improving ocean turbulence in climate models: A new scheme for upper-ocean vertical mixing • 12:00 - Steven Sherwood: A pre-training strategy to advance model parameterization via machine learning • 12:10 - Christopher Lennard: Regional climate modelling in developing nations - can we look to the clouds? • 12:20 - Discussion
12:30 - 14:00	Lunch session 12h50-13h50: Townhalls, Learning Labs, Workshops	AD11	TH12: Climate change science and research in Rwanda
		MH1	TH06: Addressing barriers to a diverse and inclusive climate modelling community
		MH2	TH11: Celebrating an Earth Systems Science Pioneer – Professor Will Steffen
		MH3	TH15: Solar Radiation Modification research and international scientific cooperation
		AD1	WM07: New economic appraisal methods for decision-making on climate and environmental policies
14:00 - 16:00	5 Parallel Sessions	DOME	S12: Advances in climate observations and model-data fusion Convenors: Toste Tanua, Magdalena Balmaseda and Juan Ruiz <ul style="list-style-type: none"> • 14:00 - Galen McKinley (<i>Keynote</i>): Constraining historical ocean carbon uptake with models, machine learning and data • 14:15 - Lars Peter Riishojgaard (<i>Keynote</i>): Internationally coordinated, top-down global greenhouse gas monitoring • 14:30 - Sylvia Ampadu: Investigating the Interaction between Tropical Convection and Atmospheric Gravity Waves over West Africa • 14:40 - Dharmaveer Singh: Integration of CMIP6-GCMs with AI-based Model for Assessing Impact of Future Climate Change on Streamflow Pattern in a Hilly Catchment • 14:50 - Amy Doherty: European Space Agency (ESA) Climate Change Initiative (CCI) Climate Modelling User Group (CMUG): interface between observations and modelling • 15:00 - Jerry Tjiputra: Optimized future observing network to detect early oceanic changes as inferred from models • 15:10 - Toste Tanhua: Ocean Observing needs for climate

DAY 2: Tuesday 24 October

Time	Session	Room	Description
			<ul style="list-style-type: none"> • 15:20 - Reagan Okoth: Estimating soil temperature with high-resolution synthetic images: a remote sensing data fusion approach • 15:30 - Andrea Steiner - <u>Remotely</u>: Monitoring atmospheric climate change - Advances with GNSS radio occultation • 15:40 - Cristina Ruiz Villena: Towards a digital twin of the carbon cycle in Europe • 15:50 - Discussion
		MH1	<p>S17: Climate feedbacks and climate sensitivity Convenors: Sandrine Bony, Steven Sherwood and Masahiro Watanabe</p> <ul style="list-style-type: none"> • 14:00 - Nadir Jeevanjee (<i>Keynote</i>): Recent advances in understanding the longwave clear-sky feedback • 14:20 - Adrian Tompkins (<i>Keynote</i>): Convective aggregation and climate • 14:40 - Trude Storelvmo <u>Remotely</u>: (<i>Keynote</i>): Climate sensitivity – the IPCC AR6 assessment and beyond • 15:00 - Brett McKim: Constraining the tropical anvil cloud area feedback • 15:10 - Chen Zhou: Explaining forcing efficacy with pattern effect and state dependence • 15:20 - Cecile Hannay: Evaluating the robustness of equilibrium climate sensitivity estimates to ocean heat fluxes in the CESM Slab Ocean Model • 15:30 - Kalli Furtado - <u>Remotely</u>: The relationship between the present-day seasonal cycle and projected cloud feedback in a climate-model ensemble • 15:40 - Discussion
		MH2	<p>S38: Connecting regional impacts and climate information Convenors: Franck Eitel Ghomsi, Yong Luo and Ángel G. Muñoz</p> <ul style="list-style-type: none"> • 14:00 - Janet Sprintall (<i>Keynote</i>): COVID Impacts Cause Critical Gaps in the Indian Ocean Observing System • 14:20 - Paska Ajok: The impact of the 2020-2021 rising water levels in Uganda's major lakes and lesson learnt, A case study of Lake Kyoga and Albert. • 14:30 - Tidiani Sanogo: Drought impacts on pastoral resources and agro-pastoral communities' responses strategies in the District of Bougouni, southwest of Mali, West Africa • 14:40 - Prakash C. Tiwari: Regional transboundary river basin climate information system in Himalaya for water, food and energy sustainability in South Asia under climate change • 14:50 - Melissa Ouya: Enhancing climate information uptake at the community level through participatory scenario planning • 15:00 - Matthias Trapp: DISA- Supporting the development of Digital Information System for Agriculture for climate change adaptation in Rwanda • 15:10 - Salma Tabassum & Fahim Asikullah: The Consequences of climate change on the agricultural revenue of indigenous people: A Focus on the adverse effects of teak plantation on soil • 15:20 - Olivier Crespo: Constructing and assessing southern and southeast Asian drought triggers for Anticipatory Action

DAY 2: Tuesday 24 October

Time	Session	Room	Description
			<ul style="list-style-type: none"> • 15:30 - Ángel G. Muñoz - <u>Remotely</u>: Enabling ecosystems of climate services to increase resilience: Examples in Central America • 15:40 - Discussion
		MH3	<p>S19: Land use and land cover change Convenors: Julia Pongratz, Anna Ukkola and David Lawrence</p> <ul style="list-style-type: none"> • 14:00 - Wim Thiery (<i>Keynote</i>) - <u>Remotely</u>: Anthropizing CESM's terrestrial water cycle • 14:20 - Garik Gutman: The land-cover/land-use component in developing an Earth System Digital Twin • 14:30 - Addisu Damtew: Spatial statistical modeling of most systematic land use land cover transitions: Drivers and livelihood implications in Awash Basin, Ethiopia • 14:40 - Kadio Angaman: Economic impacts of land degradation: Evidence from Cote D'Ivoire • 14:50 - Priskilla Heita: Geospatial modelling and monitoring of land use land cover change for human unplanned settlements in Windhoek Namibia from 1990 to 2018 • 15:00 - Lucia Cappelletti: Shallow water table in agricultural plains under rapid land use change: can land surface models capture their dynamics? • 15:10 - Clemens Schwingshackl - <u>Remotely</u>: Key drivers for uncertainties of CO2 fluxes from land use and land-use change • 15:20 - Petronille Dusingizimana : Agronomic and economic performance of conservation agriculture practices in maize production in Rwanda • 15:30 - Irina Melnikova: How do afforestation and BECCS differ in their impacts on the land carbon cycle and surface climate? • 15:40 - Shruti Nath - <u>Remotely</u>: TIMBER v0.1: emulating the biogeophysical climate responses to tree cover changes • 15:50 - Discussion
		MH4	<p>S04: Storms, eddies and jets in the atmosphere and ocean Convenors: Thando Ndarana, Tiffany Shaw and Marcia Zilli</p> <ul style="list-style-type: none"> • 14:00 - Sukyoung Lee (<i>Keynote</i>) - <u>Remotely</u>: The role of eddies and jets in shaping the climate • 14:20 - Amanda Maycock (<i>Keynote</i>): Feature-based analysis of the North Atlantic eddy-driven jet stream • 14:40 - Thando Ndarana (<i>Keynote</i>): The dynamics of different types of Rossby wave breaking in the South African domain • 15:00 - Manuel Gutierrez-Villanueva : Compensating transport trends in the Drake Passage frontal regions yield no acceleration in net transport • 15:10 - Andrea Marcheggiani - <u>Remotely</u>: Diabatic effects on the evolution of stormtracks • 15:20 - Tsholanang Rammopo: Investigating characteristics of finite amplitude Rossby wave packets maturing over the southern African domain • 15:30 - Or Hadas - <u>Remotely</u>: The role of baroclinic activity in controlling Earth's albedo in the present and future climates • 15:40 - Discussion

DAY 2: Tuesday 24 October

Time	Session	Room	Description
16:00 - 18:00	Posters & Refreshments		Live poster session at KCC <ul style="list-style-type: none"> Sessions: S04, S06, S11, S12, S13, S17, S19, S21, S38, S40 Poster Clusters: PC11, PC12, PC13, PC14, PC15, PC16, PC17, PC18, PC20, PC22
16:30-17:45	Forum	FORUM	WCRP Core Projects & Lighthouse Activities <ul style="list-style-type: none"> 16h30-16:45 - Susann Tegtmeier (<i>University of Saskatchewan</i>): The Earth System Modelling and Observations (ESMO), a Core Project of WCRP 16:45-17:00 - Peter Dueben (<i>ECMWF</i>): Digital Earths (DE), a WCRP Lighthouse Activity 17:00-17:15 - Julie Arblaster (<i>Monash University</i>) & Robert Pincus (<i>LDEO/ Columbia University</i>): WCRP Coupled Model Intercomparison Project (CMIP) 17:15-17:30 - Xubin Zeng (<i>University of Arizona</i>): The WCRP Global Precipitation Experiment (GPEX) 17:30-17:45 – Dorcas Kalele (<i>University of Nairobi</i>) & Melissa Hart (<i>University of South Wales</i>) & Chris Lennard (<i>University of Cape Town</i>): The WCRP Academy
18:00 - 18:45	Plenary in the Dome Evening Dialogue		Perspectives of Transformational Challenges – Examples from the Global South <u>Chair: Maria Ivanova</u> (<i>Director of the School of Public Policy and urban Affairs – Northeastern University; Professor of Public Policy</i>) <ul style="list-style-type: none"> 18:00 - Maxwell Gomera (<i>UNDP representative of Rwanda</i>): Equitable Transformation: Uniting for Climate Resilience in the Global South 18:15 - Abou Amani (<i>Director, Intergovernmental Hydrological Program</i>) – <u>Remotely</u>: Water security under a Changing Environment 18:30 - Discussion
From 18:45	Free time		Dining, networking, socializing
20:00 - 22:00	Evening Session Townhalls, Learning Labs, Workshops	AD1	LL05: Hands-on Introduction on running the Community Earth System Model (CESM) (starts at 19:00)
		MH1	TH04: Schmidt Futures Virtual Earth Systems Research Institute Short talk Series
		AD10	TH07: CORDEX Africa
		AD11	WM08: Early Career Researchers Network of Networks Workshop on Multidisciplinary Approaches to Climate Change Mitigation
		AD12	Early and Mid-Career Researchers (EMCR) table topics (recommended for EMCRs) Dr. Valérie Masson-Delmotte (<i>Co-Chair IPCC Working Group I, AR6</i>) Sharing experiences: curiosity-driven climate research, climate literacy, knowledge to inform climate action

Day 3: Wednesday 25 October

Time	Session	Room	Description
8:30 - 10:00	Plenary in the Dome	DOME	<p>08:30-09:10 – Climate change and the Earth System <u>Chair: Guy Brasseur</u> (Former WCRP Chair)</p> <ul style="list-style-type: none"> • Valérie Masson-Delmotte (Co-Chair IPCC Working Group I, AR6): A new agenda for climate research: <i>Title to be confirmed</i> • Jim Hurrell (WCRP JSC and Co-Lead of WCRP Task Team on Climate Intervention): Potential risks, benefits and impacts of climate intervention <p>09:10-10:00 – Panel discussion: Future of Climate Knowledge Assessment <u>Moderator: Thomas Stocker</u> (Professor, Physics Institute, University of Bern, Switzerland, Co-Chair IPCC Working Group I AR5)</p> <p><u>Panelists:</u></p> <ul style="list-style-type: none"> • Panmao Zhai (Co-Chair IPCC Working Group I, AR6) • Mark Howden (Vice-Chair IPCC Working Group II, AR6 and AR7) - <u>Remotely</u> • Diana Ürge-Vorsatz (Vice-Chair IPCC, AR7) - <u>Remotely</u>
10:00 - 10:30	Break		Tea and coffee break
10:30 - 12:30	5 Parallel Sessions	DOME	<p>S26: Mitigation scenarios including overshoot and climate intervention <u>Convenors: Ines Camilloni, Romaric C. Odoulami and Peter Irvine</u></p> <ul style="list-style-type: none"> • 10:30 - Glen Peters (Keynote) -<u>Remotely</u>: The potential and limits of carbon dioxide removal for climate mitigation • 10:45 - Peter Lawrence (Keynote): Developing an Earth System framework integrating Climate Interventions (CDR and SRM) in CESM baseline, mitigation and adaptation scenarios, with fully resolved carbon cycle and stratosphere • 11:00 - Thierry Fotso-Nguemo (Keynote): Potential impact of solar radiation management geoengineering on water deficit risk over major Central African river basins • 11:15 - Alice Wells (Keynote): Identifying climate impacts under different stratospheric aerosol injection strategies • 11:30 - David Lawrence: Mitigation through bioenergy expansion versus reforestation yields divergent terrestrial carbon storage and regional climate responses

DAY 3: Wednesday 25 October

Time	Session	Room	Description
			<ul style="list-style-type: none"> • 11:40 - Yiannis Moustakis: Earth System impacts of the deployment of large-scale land- and ocean-based Carbon Dioxide Removal portfolios • 11:50 - Danielle Touma: The impact of stratospheric aerosol injection on extreme fire weather risk • 12:00 - Discussion
		MH1	<p>S16: Ice sheets and sea level change Convenors: William Lipscomb, Petra Langebroek and Natalya Gomez</p> <ul style="list-style-type: none"> • 10:30 - Beata Csatho (<i>Keynote</i>): Ice sheet mass change and processes from satellite remote sensing and numerical modeling • 10:45 - Ted Scambos (<i>Keynote</i>): Thwaites Glacier and 'doomsday' I: The nature of the threat, the history, and recent research results • 11:00 - Leilani Henry (<i>Keynote</i>): Thwaites Glacier and 'doomsday' II: New field and ship-based field results of ITGC, and the social challenges of remote teams in Antarctica • 11:15 - Donatus Angnuureng (<i>Keynote</i>): Coastal erosion management linked to climate change in West Africa • 11:30 - Lilly Thomas: Observing supraglacial lakes using deep learning and PlanetScope imagery • 11:40 - Amila Ratnayake - <u>Remotely</u>: Stratigraphic evidence for glacial-interglacial sea-level changes in the Indian Ocean • 11:50 - Franck Ghomsi: Contribution of altimetry to the Gulf of Guinea climate resilience due to last-decade sea-level anomaly scenarios • 12:00 - Elisabeth Holland - <u>Remotely</u>: Signposts for a climate safe landing: Bringing science into practice • 12:10 - Tim Naish: The uncertain future of Antarctica's melting ice: A new research initiative • 12:15 - Discussion
		MH2	<p>S35: Mind the gap - value of GCMs/ESMs in actionable climate information contexts Convenors: Piotr Wolski, Monica Morrison and Abu Syed</p> <ul style="list-style-type: none"> • 10:30 - Ted Shepherd (<i>Keynote</i>): Climate storylines as a way of bridging the gap between model simulations and decision-relevant regional climate information • 10:50 - Daithi Stone (<i>Keynote</i>) - <u>Remotely</u>: Life beyond Planet CMIP • 11:10 - Monica Morrison (<i>Keynote</i>): The logic and ethics of Earth System Modeling: Adaptation, resilience, and investigations of interventions • 11:30 - Christopher Jack: Mind the step: Climate data as a barrier to effective decision making • 11:45 - Mohamed Issa Awal: Investment in agricultural resilience using Decision Making Under Deep Uncertainties • 12:00 - Annarita Mariotti: Envisioning U.S. Climate Predictions and Projections to Meet New Challenges • 12:15 - Alan Kennedy-Asser: Towards integrated understanding of climate impacts: a case study for Northern Ireland
		MH3	<p>S18: Current and future forcing, including aerosols and scenarios Convenors: Roland Séférian and Chris Smith</p>

DAY 3: Wednesday 25 October

Time	Session	Room	Description
			<ul style="list-style-type: none"> 10:30 - Piers Forster (<i>Keynote</i>): The importance of annual updates to the IPCC assessment of radiative forcing and other indicators 10:50 - Sophie Szopa (<i>Keynote</i>) - <u>Remotely</u>: Effects of SLCFs on climate: lessons learned from the IPCC AR6 and perspectives 11:10 - Bjørn H. Samset (<i>Keynote</i>): Climate responses to regional aerosol emissions: First results from RAMIP 11:30 - Brian Soden: State-dependence of CO₂ forcing and its implications for climate Sensitivity 11:39 - Marianne Tronstad Lund: Impact of differences in recent emission inventories on diagnosed regional and global aerosol trends and radiative forcing 1990-2019 11:57 - Shraddha Dhungel: The role of rapid methane mitigation in reducing future extreme weather events 12:06 - Discussion
		MH4	S03: Global and regional monsoons <u>Convenors:</u> Andy Turner, Tereza Cavazos, Suryachandra Rao Anguluri and Paola Andrea Arias Gomez <ul style="list-style-type: none"> 10:30 - Alice Grimm (<i>Keynote</i>) - <u>Remotely</u>: Issues and Challenges in predicting the American Monsoons 10:50 - Rondrotiana Barimalala (<i>Keynote</i>): Major issues and challenges for the African monsoons 11:10 - Roxy Mathew Koll (<i>Keynote</i>): Observing and predicting the South Asian monsoon—Challenges in a changing climate 11:30 - Ibrahim Laoouali: How well does MPAS simulate the West African monsoon system 11:40 - Pascale Braconnot: Monsoon trend and multi-scale variability changes over the last 6000 years 11:50 - Nirupam Karmakar - <u>Remotely</u>: Performance assessment of a multi-physics multi-model ensemble strategy in simulating northward propagation of the Indian summer monsoon rainfall 12:00 - Chao He - <u>Remotely</u>: Zonal asymmetric response of northern hemispheric monsoon to global warming 12:10 - Discussion
12:30 - 14:00	Lunch session 12h50-13h50: Townhalls, Learning Labs, Workshops	AD11	TH10: Managing climate overshoot in Africa
		MH2	TH13: A web portal dedicated to climate change impact studies in the Global South
		AD1	WM09: Climate science information for climate adaptation
		AD12	WM10: Introducing the WCRP Academy
		AD10	CM02: Strengthening the observational-modelling interface to meet emerging scientific needs critical to our understanding of climate change
14:00 - 16:00	5 Parallel Sessions	DOME	S27: Hazards and Extreme events <u>Convenors:</u> Tim Raupach, Jana Sillmann, Shampa and Olivia Martius <ul style="list-style-type: none"> 14:00 - A.K.M. Saiful Islam (<i>Keynote</i>): Climatic impact-driver (CID) Framework for Regional Impact and Risk Assessment 14:20 - Gabi Hegerl (<i>Keynote</i>): Changes in climate extremes: Achievements and challenges 14:40 - Brian Mills (<i>Keynote</i>) - <u>Remotely</u>: Co-production of impact-based forecasts and warnings for high impact weather in a changing climate

DAY 3: Wednesday 25 October

Time	Session	Room	Description
			<ul style="list-style-type: none"> • 15:00 - Roxy Mathew Koll: Marine Heatwaves, Tropical Cyclones, and Terrestrial Heat Waves Cascading in a Changing Climate • 15:10 - Mighel Angel Lovino - Remotely: Flash droughts are becoming more frequent in croplands worldwide • 15:20 - Tshimangadzo Rasifudi - Remotely: Analysis of hydro-meteorological drought using drought indices and the SWAT model in the Vaal River Catchment-South Africa • 15:30 - Mary-Jane Bopape - Remotely: Weather Related Disasters in South Africa from 1979 to 2022 • 15:40 - Discussion
		MH1	<p>S20: Impacts on land and marine ecosystems Convenors: Daouda Kone and Gensuo Jia</p> <ul style="list-style-type: none"> • 14:00 - Robert Marchant (<i>Keynote</i>): Future solutions for addressing impacts of a changing climate on biodiversity, ecosystem functioning and life on earth • 14:20 - Brice Augustin Sinsin (<i>Keynote</i>): Cattle herds movements affected by scattered land use patterns in the Sahel cause massive transhumance southward causing overgrazing impacts and social conflicts in West Africa • 14:40 - Robert Eagle: The role of biological pH regulation in determining responses of organisms to ocean acidification and warming • 14:50 - Gayathra Charuka Bandara Aledniyagoda Gedara : Impact of climate change on behaviour of marine mammals • 15:00 - Gensuo Jia - Remotely: Urban food-energy-water nexus under climate change and extremes • 15:10 - Chantal Hari - Remotely: Combining future projections of land-use and climate change to assess their impact on biodiversity • 15:20 - Aditi Modi: Impacts of climate change on marine primary productivity in the Tropical Indian Ocean: Evidence from satellite observations and Earth System models • 15:30 - Discussion
		MH2	<p>S36: Observations for decisions Convenors: Martin Visbeck and Abdou Ali Cra</p> <ul style="list-style-type: none"> • 14:00 - Ed Hawkins (<i>Keynote</i>) - Remotely: Rainfall Rescue: extending instrumental UK rainfall reconstructions • 14:20 - Matthew Saunders (<i>Keynote</i>): Designing a pan-African climate observation system to deliver societal benefit through climate action: The KADI project • 14:40 - Collins Gameli Hodoli (<i>Keynote</i>): Exploring the robustness of air sensors for understanding the impacts of location-specific agricultural practices on local air quality • 15:00 - Thomas Bornman - Remotely: Development of a pilot Coastal GHG Observing System in southern Africa • 15:10 - James Thornton: Quantifying in situ climatological data coverage and human population dynamics across the mountains of Africa • 15:20 - Michaela Hegglin: Earth observations in support of the UNFCCC Paris Agreement • 15:30 - Martin Visbeck: Digital Twins of the Ocean – Opportunities to inform sustainable ocean governance • 15:40 - Discussion

DAY 3: Wednesday 25 October

Time	Session	Room	Description
		MH3	S28: Regional information – Data and methods Convenors: Francisco J. Doblas-Reyes, Caio Augusto dos Santos Coelho and Chi Huyen Truong <ul style="list-style-type: none"> 14:00 - José María Tárraga (Keynote): Causal and explainable machine-learning models for hazard-induced displacement 14:20 - Julien Boé (Keynote) - <u>Remotely</u>: A simple hybrid statistical dynamical downscaling method to address the challenge of providing tailored regional climate change information 14:40 - Masilin Gudoshava (Keynote): The objective seasonal forecasting approach over Eastern Africa: Benefits, challenges and future prospects 15:00 - Tufa Dinku: Integrating global and local data to support climate research and adaptation in Africa 15:10 - Stefan Sobolowski: Subselection of seasonal ensemble precipitation predictions for East Africa, Norway 15:20 - Caio Coelho: Cascading multi-model sub-seasonal predictions from global to regional and local scales 15:30 - Fiona Spuler: Case studies in bias adjustment: investigating potential pitfalls through method comparison and multivariate evaluation using a new open-source python package 16:00 - Discussion
		MH4	S08: Ocean-atmosphere interactions: energy, water & carbon Convenors: Meghan Cronin, Precious Mongwe and Luciano Pezzi <ul style="list-style-type: none"> 14:00 - Lisa Miller (Keynote) - <u>Remotely</u>: New challenges in transcending the boundary: The Surface Ocean-Lower Atmosphere Study at 20 14:15 - Brian Ward: Too Big to Fail: the Coupled Ocean-Atmosphere System 14:25 - Sarah Nicholson (Keynote) - <u>Remotely</u>: The impact of storms on CO₂ and heat exchange across the Southern Ocean 14:40 - Agostino Niyonkuru Meroni (Keynote): Fast thermal air-sea coupling: the instantaneous wind response and the role of environmental conditions 14:55 - Tong Lee: Enhancing space-based capabilities for observing ocean-atmosphere interactions 15:05 - Richard Cornes (Keynote) - <u>Remotely</u>: Facilitating the Evaluation of Air-Sea Fluxes: The AirSeaFluxCode Package 15:20 - Ines Leyba: The South Atlantic Ocean as a moisture source region and its relation with precipitation in South America 15:30 - Adelina Gaol - <u>Remotely</u>: Impacts of MJO on the atmosphere-ocean variable and linkages to Indonesian throughflow in the Indonesian seas 15:40 - Matthew Collins: Emergence of Climate Change in the Tropical Pacific 15:50 - Discussion
16:00 - 18:00	Posters & Refreshments		Live poster session at KCC <ul style="list-style-type: none"> Sessions S03 S08, S16, S18, S20, S26, S27, S28, S35, S36 Poster Clusters: PC21, PC23, PC24, PC25, PC26, PC27, PC28, PC29

DAY 3: Wednesday 25 October

Time	Session	Room	Description
16:30-17:45	Forum	FORUM	WCRP Core Projects & Lighthouse Activities <ul style="list-style-type: none"> 16:30-16:45- Sonya Legg (<i>Princeton University</i>): Climate and Ocean - Variability, Predictability and Change (CLIVAR), a Core Project of WCRP 16:45-17:00 - Jan Polcher (<i>Laboratoire de Météorologie Dynamique – IPSL</i>) & Xubin Zeng (<i>University of Arizona</i>): The Global Energy & Water Experiment (GEWEX), a Core Project of WCRP 17:00-17:15 - Meghan Taylor (<i>University of Massachusetts</i>): Climate and Cryosphere (CliC), a Core Project of WCRP 17:15-17:30 – Amanda Maycock (<i>University of Leeds</i>): Stratosphere-troposphere - Processes And their Role in Climate (SPARC), a Core Project of WCRP 17:30-17:45 – Silvina Solman (<i>University of Buenos Aires</i>): Coordinated Regional Climate Downscaling Experiment (CORDEX), a WCRP Network
18:00 - 18:45	Plenary in the Dome Evening Dialogue		The Future of Climate Modeling - What is needed to address the scientific and societal challenges of climate change? Chair: Celeste Saulo (<i>WMO Secretary-General Elect</i>) <ul style="list-style-type: none"> 18:00 - Bjorn Stevens (<i>Max Planck Institute for Meteorology</i>): How climate change is transforming climate modeling 18:15 - Katherine Calvin (<i>Chief Scientist and Senior Climate Advisor, NASA</i>) – <u>Remotely</u>: Climate modeling for societal applications 18:30 - Discussion
From 18:45	Free time		Dining, networking, socializing
20:00 - 22:00	Evening Session Townhalls, Learning Labs, Workshops	AD1	LL05: Hands-on Introduction on running the Community Earth System Model (CESM) (starts at 19:00)
		MH1	TH08: Advancing the World Meteorological Organization Climate Services Information System for improved delivery of climate services
		AD11	WM08: Early Career Researchers Network of Networks Workshop on Multidisciplinary Approaches to Climate Change Mitigation (Part 2)
		AD10	WM11: An Interactive Workshop on minimizing risk through informed decision support
		MH2	TH16: Earth Virtualization Engines (EVE) – Implications and opportunities for Climate Service and Science
		AD12	Early and Mid-Career Researchers (EMCR) table topics (recommended for EMCRs) Prof. Celeste Saulo (<i>WMO Secretary General Elect</i>) <ul style="list-style-type: none"> Promoting gender, regional, career stage diversity/balance at workplace, panels, and conferences Moving from research/academics to non-academic positions

Day 4: Thursday 26 October

Time	Session	Room	Description
8:30 - 10:00	Plenary in the Dome	DOMES	<p>Climate Change Solutions <u>Chair:</u> Detlef Stammer (WCRP Chair)</p> <ul style="list-style-type: none"> 08:30 - Aditi Mukherji (Director, Climate Adaptation and Mitigation Impact Area Platform, CGIAR): Feeding the future global society - challenges for food security 08:50 - Peter Dueben (Head of Earth System Modelling, ECMWF): Digital revolution - Climate information for all, FAIR climate info 09:10 - Minal Pathak (Associate Professor, Global Centre for Environment and Energy, Ahmedabad University, India): 2023: Assessing Progress on Climate Change Mitigation and Sustainable Development 09:30 - Discussion - Review of Dome Plenary messages and synthesizing into key messages for Conference statement <u>Moderator:</u> Detlef Stammer (WCRP Chair)
10:00 - 10:30	Break		Tea and coffee break
10:30 - 12:30	5 Parallel Sessions	DOMES	<p>S09: Interactions between atmospheric composition and climate, including aerosol processes <u>Convenors:</u> Delphine Farmer and Alex Archibald</p> <ul style="list-style-type: none"> 10:30 - Arlene Fiore (Keynote) <u>Remotely</u>: Imprints of climate variability and global change on tropospheric ozone trends 10:45 - Cora Young (Keynote): The changing environmental impacts of fluorinated gases: Considering climate impacts and persistent product formation 11:00 - Catherine Scott (Keynote) - <u>Remotely</u>: Climate driven interactions between the terrestrial biosphere and atmospheric composition 11:15 - Ilona Riipinen (Keynote) - <u>Remotely</u>: Key processes for bottom-up understanding of aerosol-cloud interactions and their implications of aerosol forcing: Highlights from the FORCES project 11:30 - Louis Ladino (Keynote): The importance of aerosol particles from Tropical latitudes in ice-cloud formation and climate 11:45 - Plenary discussion: Critical gaps for studies in atmospheric composition and climate for a Net Zero world?
		MH1	<p>S23: Circulation change in the climate system (atmosphere and ocean) <u>Convenors:</u> Julie Arblaster, Isla Simpson and Xiuqun Yang</p> <ul style="list-style-type: none"> 10:30 - Rong Zhang (Keynote) - <u>Remotely</u>: Understanding changes in the North Atlantic Ocean circulation and the associated impacts on climate 10:50 - Rowan Sutton: Drivers of change in North Atlantic atmosphere and ocean circulation: a synthesis of findings from the UK ACSIS program

DAY 4: Thursday 26 October

Time	Session	Room	Description
			<ul style="list-style-type: none"> • 11:00 - Sandeep Narayansetti - <u>Remotely</u>: South Asian monsoon response to weakening of the Atlantic meridional overturning circulation in a warming climate • 11:10 - Mauricio Rocha - <u>Remotely</u>: Meridional overturning circulation and South Atlantic heat balance in a warming climate • 11:20 - Sugata Narsey - <u>Remotely</u>: Local zonal and meridional overturning in CMIP6 models • 11:30 - Xichen Li (<i>Keynote</i>): Atmospheric circulation mediates climate changes between tropics and polar regions • 11:50 - Rym Msadek: Large-scale oceanic response to Arctic sea ice decline • 12:00 - Sarah Kang (<i>Keynote</i>): Global impact of recent Southern Ocean cooling • 12:20 - Tiffany Shaw: Arctic sea ice loss weakens Northern Hemisphere summertime storminess but not until the late 21st century
		MH2	<p>S33: Linking policy and climate information Convenors: Cocou Jaures Amegnaglo and Adriaan Perrels</p> <ul style="list-style-type: none"> • 10:30 - Keith Williges (<i>Keynote</i>): Assessing the ability to meet basic needs under mitigation pathways - considerations of fairness and climate justice in future climate scenarios • 10:52 - Palmira Cuéllar-Ramirez (<i>Keynote</i>): Climate Scientists as climate negotiators for UNFCCC processes • 11:14 - Herbert Mba Aki: The monetization of the protection of the forests in Gabon • 11:23 - Joseph Manzvera - <u>Remotely</u>: Economic value of Agro-meteorological Services: A review of the international literature • 11:32 - Adriaan Perrels - <u>Remotely</u>: Socioeconomic appraisal of different levels of adaptation to climate change • 11:41 - Cocou Jaures Amegnaglo: Can we marry the traditional and modern seasonal forecast systems? • 11:50 - Q & A • 12:03 - Kareem Buyana: Gender and climate change: Shifting the discourse from victimhood to capabilities (<i>Withdrawn</i>) • 12:12 - Ines Alterio (<i>Keynote</i>) - <u>Remotely</u>: MAGICA: Establishing a « single market » for science-based climate policy • 12:21 - Q & A
		MH3	<p>S32: Capacity development for climate services Convenors: Tufa Dinku, Amanda Grossi, Pablo Borges de Amorim</p> <ul style="list-style-type: none"> • 10:30 - Mandira Shrestha (<i>Keynote</i>): Institutional capacity building on spatial and temporal climate change analysis using CORDEX regional climate models over South Asia • 10:50 - Amanda Grossi (<i>Keynote</i>): From research to practice: Integrating climate information into agricultural extension systems in East, Southern, and West Africa • 11:10 - Prakash Tiwari: Women centric low tech flood early warning system in marginalized mountain environment: An illustration of community capacity development for climate services in Himalaya

DAY 4: Thursday 26 October

Time	Session	Room	Description
			<ul style="list-style-type: none"> • 11:20 - Alain Bourque: How do we increase communication and collaboration between climate service providers: towards a network of networks • 11:30 - Lora Batino: WCRP Academy: Establishing an online marketplace for climate science training • 11:40 - Alcade Segnon: Enabling capacity to improve climate information services in West Africa: experience and lessons learnt through AICCRA project • 11:50 - Q & A • 12:10 - Discussion
		MH4	<p>S05: Polar processes and change Convenors: Helene Seroussi and Timothy Naish</p> <ul style="list-style-type: none"> • 10:30 - Christopher Horvat (Keynote) - <u>Remotely</u>: The polar tempest: remote sensing and modelling of how sea ice geometry drives polar air-sea interactions. • 10:50 - James Renwick (Keynote) - <u>Remotely</u>: Whither Antarctic Sea Ice? • 11:10 - Pengfei Zhang: More frequent atmospheric rivers slow the seasonal recovery of Arctic sea ice • 11:20 - Camille Lique: How are mesoscale eddies and sea ice influencing each other in the Arctic? • 11:30 - Divya David T.: Interannual influence of Atlantic waters on the biogeochemistry of an Arctic fjord • 11:40 - Sandy Thomalla: Widespread changes in Southern Ocean phytoplankton blooms linked to climate drivers • 11:50 - Jan Rieck: Heat transport towards sea ice by mesoscale eddies in an idealized Southern Ocean • 12:00 - Discussion
12:30 - 14:00	Lunch session 12h50-13h50: Townhalls, Learning Labs, Workshops	AD10	LL06: Democratizing climate science: making it meaningful at local scales
		AD11	WM13: Community engagement and feedback on the SOLAS science agenda
		AD12	WM14: Shifting the power of convening back to the south - building Africa leadership through regionally led, bottom-up collaboration
		FORUM	GA01: Journey of a Kigali Pixel - Game (Part 2)
14:00 - 16:00	5 Parallel Sessions	DOME	<p>S07: Atmosphere-land interactions Convenors: Eleanor Blyth, Aihui Wang and Anna Sörensson</p> <ul style="list-style-type: none"> • 14:00 - Chris Taylor (Keynote): Soil moisture persistence and its impact on multi-day storm predictability at the mesoscale – an illustration from the Sahel • 14:20 - Xianhong Meng (Keynote): Strong soil moisture-atmosphere interactions on the Tibetan Plateau and its behind energy mechanism • 14:40 - Francina Dominguez (Keynote) - <u>Remotely</u>: Dry land surfaces and their effect on atmospheric circulation • 15:00 - Robert Allen: Enhanced global fire activity under increasing CO₂: The dominant role of vegetation and the CO₂ fertilization effect • 15:10 - Hlengiwe Ntuli: Carbon dioxide emission rates in different land use systems of the Letaba catchment, Limpopo province, South Africa.

DAY 4: Thursday 26 October

Time	Session	Room	Description
			<ul style="list-style-type: none"> • 15:20 - Muyaka Kamamba: Forest-Water Nexus: An Evapotranspiration assessment of the Kafue River Sub-Basin using Remote Sensing • 15:30 - Xubin Zeng: Land-atmosphere interactions at diurnal to climate time scales from observations and modeling: Our recent progress • 15:40 - Discussion
		MH1	<p>S10: Lessons from paleoclimate for recent and future climate change Convenors: Cristiano Chiessi, Masa Kageyama and Kira Rehfeld</p> <ul style="list-style-type: none"> • 14:00 - Yassine Brahimi (Keynote): The spatiotemporal extent of the Green Sahara during the Last Glacial Period: Potential implications for early human populations • 14:22 - Jiang Zhu: Clearing clouds of uncertainty with the help of paleoclimate • 14:37 - Benjamin Keenan: Molecular and isotopic indicators of fire history, population, vegetation and climate change in the Maya lowlands • 14:52 - Steven Sherwood: Using simple models to help interpret the palaeoclimate record • 15:07 - Marfasran Hendrizan: Strengthening of the Pacific Meridional Overturning Circulation (PMOC) as a forcing for slowdown of the Indonesian throughflow during the last deglaciation • 15:22 - Paul Valdes: Tuning climate models with paleoclimate data • 15:37 - Marina Duetsch: Response of water isotopes in precipitation to a collapse of the West Antarctic Ice Sheet in high-resolution simulations with the Weather Research and Forecasting Model • 15:52 - Discussion
		MH2	<p>S31: Climate knowledge co-production in a decision and policy context Convenors: Daniela Jacob, Simon Marsland, Asuncion Lera St Clair, Mzime Murisa and Roché Mahon</p> <ul style="list-style-type: none"> • 14:00 - Heide Hackmann (Keynote): Transformation through transdisciplinarity • 14:10 - Rezwan Siddiqui: Examining participation in climate decision-making: myth and reality • 14:18 - Discussion • 14:41 - Lucy Mtilatila (Keynote) – Remotely: Co-production in Climate Services • 14:51 - Roger Pulwarty: Going to extremes in climate services: Lessons and practices for managing through the new abnormal • 14:59 - Sameera Noori: Silver-lining in a cascading crisis: Interdisciplinary knowledge production for impactful climate science in Afghanistan • 15:07 - Discussion • 15:22 - Alice McClure (Keynote): Principles for co-producing climate services: practical insights from FRACTAL • 15:32 - Discussion

DAY 4: Thursday 26 October

		MH3	<p>S25: Regional climate change Convenors: Tannecia Stephenson, Arona Diedhiou and Mouhamadou Bamba Sylla</p> <ul style="list-style-type: none"> • 14:00 - Erika Coppola (<i>Keynote</i>): Regional climate change assessments - where we are and future outlook • 14:20 - Christopher Lennard (<i>Keynote</i>): A decade of CORDEX-Africa: Achievements, challenges and opportunities • 14:40 - Chunyang Jung (<i>Keynote</i>): Global warming impacts on tropical cyclones: climate-scale statistics and event case studies • 15:00 - Xuejie Gao: Precipitation simulation and future projections over China by an ensemble of multi-GCM driven RCM simulations • 15:10 - Marianne Tronstad Lund: Variability and evolution of fire weather conditions in high latitude boreal forest regions under levels of global warming • 15:20 - Omar Müller - <u>Remotely</u>: Time of emergence of African Rivers • 15:30 - Discussion
		MH4	<p>S30: Uncertainties in climate projections: plausibility, possibility and probability Convenors: Douglas Maraun and Marjolijn Haaasnoot</p> <ul style="list-style-type: none"> • 14:00 - Amadou Gaye (<i>Keynote</i>): Co-construction of knowledge for addressing climate change impacts and adaptation in Sénégal, West Africa • 14:20 - Judy Lawrence (<i>Keynote</i>) - <u>Remotely</u>: Projections or reality for decision makers: either/or, or both? • 14:40 - Bart van den Hurk (<i>Keynote</i>): Improving climate resilience of society using well-designed weather impact scenarios • 15:00 - Gaby Langendijk: Toward a sustainable adaptation plausibility framework • 15:10 - Rodric Merime Nonki: Quantification and allocation of uncertainties of climate change impacts on hydropower potential under 1.5oC and 2.0oC Global Warming Levels in the Benue River basin, Cameroon • 15:20 - Elena Saggiaro: Using climate storylines in climate risk assessments for enabling policy action: a case study for Iraq's National Adaptation Plan • 15:30 - Innocent Masukwedza: Potential for surprising heat and drought events in wheat-producing regions of USA and China • 15:40 - Discussion
16:00 - 18:00	Posters & Refreshments		<p>Live poster session at KCC</p> <ul style="list-style-type: none"> • Sessions: S05, S07, S09, S10, S23, S25, S30, S31, S32, S33 • Poster Clusters: PC31, PC32, PC33, PC34, PC35, PC36, PC37, PC38, PC39, PC40, PC41, PC42, PC43
16:30-17:45	Forum	FORUM	<p>WCRP Core Projects & Lighthouse Activities</p> <ul style="list-style-type: none"> • 16:30-16:45 - Ted Shepherd (University of Reading) & Regina Rodrigues (Federal University of Santa Catarina): My Climate Risk (MCR), a WCRP Lighthouse Activity • 16:45-17:00 - Steven Sherwood (University of South Wales) & Gaby Hegerl (University of Edinburgh): Safe Landing Climates (SLC), a WCRP Lighthouse Activity

DAY 4: Thursday 26 October

			<ul style="list-style-type: none"> • 17:00-17:15 – Rowan Sutton (<i>University of Reading</i>) & Kirsten Findell (<i>NOAA</i>): Explaining and Predicting Earth System Change (EPESC), a WCRP Lighthouse Activity • 17:15-17:30 - Silvina Solman (<i>University of Buenos Aires</i>) and Bruce Hewitson (<i>University of Cape Town</i>): Regional Information for Society (RIFS), a Core Project of WCRP
19:00 -	Conference dinner		<p>Conference Banquet</p> <p><u>Chairs:</u> Conference Chairs</p> <ul style="list-style-type: none"> • Craig Reucassel (<i>Writer and comedian</i>) • Jeanne d'Arc Mujawamariya (<i>Minister for Environment</i>) • Cultural entertainment

Day 5: Friday 27 October

Time	Session	Room	Description
8:30 - 10:30	Plenary in the Dome	DOME	<p>Conference Closing <u>Chairs:</u> Conference Chairs</p> <p>08:30-09 :00 - Summary of outcomes and key messages</p> <p>09:00-09:45-Looking forward – climate science priorities, needs and challenges</p> <ul style="list-style-type: none"> • 09:00 - Jim Skea (<i>IPCC Chair</i>) - <u>Remotely</u>: Challenges for the IPCC Seventh Assessment Cycle • 09:15- Guy Brasseur (<i>Former WCRP Chair</i>): Future of Climate Science • 09:30 - (<i>TBD</i>): Vision from the Early to Mid-Career Researchers' Symposium <p>09:45-10:30 - Panel discussion: What next, where from here? <u>Moderator:</u> Diana Ürge-Vorsatz (<i>IPCC Vice Chair</i>)</p> <ul style="list-style-type: none"> • Robert Vautard (<i>IPCC co-chair Working Group 1</i>) - <u>Remotely</u> • Bart van den Hurk (<i>IPCC co-chair Working Group 2</i>) - <u>Remotely</u> • Kristie Ebi (<i>Future Earth</i>) • Amanda Maycock (<i>WCRP/SPARC co-chair</i>)
10:30 - 11:00	Break		Tea and coffee break
11:00 – 12:00	Plenary in the Dome	DOME	11:00-12:00- Adoption of Conference Statement (Kigali declaration)

DAY 5: Friday 27 October

Time	Session	Room	Description
12 :00 - 13 :00	Plenary in the Dome	DOME	<p>Conference Closing</p> <ul style="list-style-type: none"> • 12:00- 12:30 - Closing messages from co-sponsors and hosts <ul style="list-style-type: none"> ○ WCRP co-sponsors <ul style="list-style-type: none"> ▪ Abdulla Al Mandous (<i>President of WMO</i>) - Remotely ▪ Peter Gluckman (<i>President of the International Science Council</i>) – Remotely ▪ Yutaka Michida (<i>Chair of the Intergovernmental Oceanographic Commission</i>) – Remotely ○ Rwanda hosts • 12:30- 13:00 Closing from Conference Co-Chairs <ul style="list-style-type: none"> ○ Presentation of Awards ○ Thanks ○ Farewell and Conference formally closes
14:30 - 18:00	Workshop	AD10	WM12: Identifying regional science priorities for Early and Mid-Career Researchers (EMCRs) for and in Africa

Early and Mid-Career Researchers Symposium

Day 1: Sunday 22 October @ Kigali Convention Centre

08:30-08:35	Opening of the Symposium Prof. Dr. Detlef Stammer, Chair WCRP Joint Scientific Committee
08:35-08:50	Purpose, prospective outcomes of workshop & schedule Dr. Hindumathi Palanisamy, Scientific officer, WCRP Secretariat
09:00-09:30	Introduction to the World Climate Research Programme Dr. Pascale Braconnot, Vice-Chair, WCRP Joint Scientific Committee
09:30-09:50	Climate Resilience : How EMCRs from Africa are involved? Dr. Mouhamadou Bamba Sylla, African Institute of Mathematical Sciences (AIMS), Kigali, Rwanda
09:50-10:15	How do African countries and small states meet their global environmental commitments? Prof. Maria Ivanova, Northeastern University, Boston, U.S.A.
10:15-10:45	<i>Short break</i>
10:45-12:30	Break out session on- 1). What are key climate research and knowledge gaps in the global South, and how can we advance climate science in and for the global South? 2). How do we create robust climate science information that is used at local scales? 3). How can EMCRs contribute to supporting policy making with climate science and knowledge, during the upcoming decade, also called the "decade of decisions?"
12:30-14:00	<i>Lunch break</i>

14:00-16:00	EMCR Workshop on ‘Effective science communication- from peer-reviewed articles, project proposals to public communication’
16:00-16:30	<i>Short break</i>
16:30-18:00	EMCR OSC poster presentation discussion
<i>Ice-Breaker Dinner</i>	

Day 2: Saturday 28 October @ AIMS, Kigali

12:00 onwards	Meet up and lunch discussions with AIMS graduate students
13:30-15:00	Reflecting on the outcomes of the WCRP OSC and EMCRs’ role in WCRP
15:00 -15:15	<i>Short break</i>
15:15-17:15	Brainstorm Session: Article on how WCRP can help connect climate science and society through the EMCRs
17:15-17:30	Wrap up of the Symposium
From 18 :00	Dinner organized by AIMS

WCRP is also organizing two ‘Table Topics’ events in the evenings of 24 and 25 October that will be open to all EMCRs at the Open Science Conference.



Side events scheduled outside the five Open Science Conference core days

17-21 October

- LL01: Face to Face course on Cloud Computing and Algorithms for EO Analyses (*at Digi Center, Kigali*)

Saturday 21 October

- WM02: Institute of Computing for Climate Science (ICCS) Workshop (*at AIMS Kigali*)

Sunday 22 October

- TH01: Artificial Intelligence for Climate Risk mitigation: Navigating Opportunities and Challenges (*at Kigali Convention Centre - Room AD10*)

Friday 27 October

- WM15: GEO Mountains Workshop: Interdisciplinary Monitoring, Data, and Capacity Sharing Across East Africa (*at University of Rwanda, Kigali*)

COME JOIN US!

Contact us:

WCRP-OSC23@wcrp-climate.org



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