



Paper Presentation Session 1A: Improving Crop Models to Capture Extreme Climate Responses Tuesday, June 27th 14:00-15:30 (UTC-4) Session Co-Leaders: Gerrit Hoogenboom and Montse Salmeron		
<i>Lead Author</i>	<i>Abstract</i>	<i>Timing</i>
Kenneth J. Boote	Lessons Learned from Crop Model Intercomparisons	14:00-14:18
Bruce A Kimball	Simulation of Evapotranspiration and Soil Temperature under Maize: an Inter-comparison Among 41 (ET) and 33 (Soil T) Maize Models	14:18-14:36
Montse Salmeron	Intercomparison of soybean models for simulation of evapotranspiration and uncertainty under variable environmental conditions	14:36-14:54
Davide Cammarano	Response of crop models' sub-routines to changes in atmospheric CO ₂	14:54-15:12
Abdisa Alemu (tbc)	Impacts of Climate Variability on Sorghum crop yield in Babile District, Eastern Ethiopia	15:12-15:30

Paper Presentation Session 1B: Improving Crop Models to Capture Extreme Climate Responses Wednesday, June 28th 11:15-12:30 (UTC-4) Session Co-Leaders: Gerrit Hoogenboom and Monste Salmeron		
<i>Lead Author</i>	<i>Abstract</i>	<i>Timing</i>
Soora Naresh Kumar	Quantification of uncertainty in impacts on crop yield due to the GCM and RCM scenarios and Crop simulation models in diverse environments	11:15-11:30
Rogério de S. Nória Júnior	Improving DSSAT-Nwheat to extreme wet climate responses	11:30-11:45
Akinseye Folorunso, Madina Diancoumba (Presenter)	Finding adaptation options for smallholder farmers in West and Central Africa by improving the modeling of millet under climate risk scenarios using APSIM	11:45-12:00
Sifang Feng	Interdependence among subregional crop production affects global crop failure risk	12:00-12:15
Xuhui Wang	Extreme rainfall reduces one-twelfth of China's rice yield	12:15-12:30

Paper Presentation Session 2A: Regional Integrated Assessments		
Tuesday, June 27th 14:00-15:30 (UTC-4)		
Session Co-Leaders: Laure Tall and Sabine Homann-Kee Tui		
Lead Author	Abstract	Timing
Babacar Faye	Can crop variety affect climate change impacts signal on major crop yields in Senegal?	14:00-14:15
Wajid Nasim (Virtual)	Consortium on Climate Change, Sustainability & Conservation (CCSC): A Way Forward for Sustainable Food Security & Smart Policies to Address Global Food Systems	14:15-14:30
Sabine Homann-Kee Tui	Balancing co-benefits and trade-offs between climate change mitigation and adaptation under mixed crop-livestock systems in semi-arid Zimbabwe	14:30-14:45
Valentin Pret	Don't put all your eggs in one basket: legumes diversification to improve resilience of rainfed cropping systems in sub-humid Zimbabwe	14:45-15:00
Espoir Mukengere Bagula (tbc)	Climate Change Effect on Water Use Efficiency under Selected Soil and Water Conservation Practices in the Ruzizi Catchment, Eastern D.R. Congo	15:00-15:15
Manyazwal Getachew (tbc)	Effects of Climate Change on rain-fed agriculture and evaluating the irrigation potential to enhance crop production, a case of Hare Watershed, Ethiopia	15:15-15:30

Paper Presentation Session 2B: Regional Integrated Assessments		
Thursday, June 29th 11:00-12:30 (UTC-4)		
Session Co-Leaders: Laure Tall and Sabine Homann-Kee Tui		
Lead Author	Abstract	Timing
Benjamin Stuch	New land use change scenarios in the southwestern Amazon and the need of novel integrative approaches for assessing sustainable land use trajectories.	11:00-11:12
Elena V. Samokhvalova (Virtual)	Grain crop Simulation modelling in relation to agricultural land assessment in the Samara region (Russia)	11:12-11:24
Fasil M. Rettie	Regional-scale evaluation of uncertainty in the multi-model simulation of climate change impact on maize and wheat	11:24-11:36
Priyanka Swami (Virtual)	Climate risk area identification and shock prediction for pearl millet production in North-West India	11:36-11:48
Siwa Msangi	Capturing production technologies and field practices in regional economic models: the examples of REAP and USARM	11:48-12:00
Subash Nataraja Pillai	Science with participatory approach on assessment of climate change impact on farm production under Sustainable Agricultural Pathway	12:00-12:12
Shakeel Ahmad (Virtual)	Regional Integrated Assessment of Climate Change Impact on Cotton Production in a Semi-arid Environment	12:12-12:24

Paper Presentation Session 3: Global Assessments of Food Systems, Trade & Diets in a Changing World Tuesday, June 27th 14:00-15:30 (UTC-4) Session Co-Leaders: Dominique van der Mensbrugghe and Daniel Mason-D'Croz		
Lead Author	Abstract	Timing
Julia M. Schneider	Modeling Global Cropland Expansion: Trade-Offs with Biodiversity, Carbon Emissions, and Food Security	14:00-14:18
Marco Springmann (Virtual)	Options for reforming agricultural subsidies from health, climate, and economic perspectives	14:18-14:36
Ruth Delzeit (Virtual)	Assessing impacts of climate change on agricultural markets taking uncertainties in global crop yield projections into account	14:36-14:54
Tony Carr	Addressing the Rising Food Demand in The Gambia: Can Climate-Smart Agriculture and Increased Crop Productivity Reduce Dependence on Imports?	14:54-15:12
Hasan Alkhaza'leh (tbc)	Effect of irrigation with treated wastewater on potatoes' yields, soil chemical, physical and microbial properties	15:12-15:30

Paper Presentation Session 4: Modeling Nutrition, Food Security and Crop Losses Tuesday, June 27th 14:00-15:30 (UTC-4) Session Co-Leaders: Lew Ziska and Jose Guarin		
Lead Author	Abstract	Timing
Gatien Falconnier	Increased mineral fertilizer use on maize can improve both household food security and regional food production in East Africa	14:00-14:12
Jonas Jägermeyr	Climate change impacts on global crop productivity and its nutritional value	14:12-14:24
Jyoti Singh	Improving the ozone damage parameterization in Community Land Model 5 (CLM5)	14:24-14:36
Mareike Köster	Effects of climate change and autonomous adaptation on spring barley production across 18 sites in Europe	14:36-14:48
Molly Brown, Walid Ouret (Presenter)	Enabling Anticipatory Action to Reduce Acute Malnutrition	14:48-15:00
Sreeja Jaiswal (Virtual)	Projecting a food insecure world: Equity implications of land-based mitigation in IPCC modelled mitigation pathways	15:00-15:12
Rosita Endah epe Yocgo (Virtual)	Hotspots for Fall Army Worm in Africa under CMIP6 scenarios	15:12-15:24

Paper Presentation Session 5: Seasonal Forecasting and Food Shocks		
Tuesday, June 27th 14:00-15:30 (UTC-4)		
Session Co-Leaders: Phil Alderman and Kaela Lucke		
Lead Author	Abstract	Timing
Mariaelisa Polsinelli	Combining a Process Based Model with Machine Learning for Potato Yield Prediction in Prince Edward Island, Canada	14:00-14:15
Marlene Palka	Assessing the performance of crop forecasts for in-season nitrogen management of winter wheat	14:15-14:30
Rogério de Souza Noia Junior	Implications of wheat supply disruptions for global food security	14:30-14:45
Ron Sands	Multi-Breadbasket Failures and Shocks to Food Systems: AgMIP Simulations	14:45-15:00
Divya Uniyal Chamoli (tbc)	Statistical analysis of Relationship between rainfall and yield (estimated from Remote sensing during last 19 years) of Wheat crop in Hilly state of Uttarakhand of India	15:00-15:15
Ritvik Sahajpal (tbc)	How's it Growing? Results from Global Application of GEOCIF Model to Forecast Crop Yields from Field To Regional Scales.	15:15-15:30

Paper Presentation Session 6: Data Assimilation and Remote Sensing		
Tuesday, June 27th 14:00-15:30 (UTC-4)		
Session Co-Leaders: Meijian Yang and Luke Monhollon		
Lead Author	Abstract	Timing
Hossein Zare	Exploring the role of model structure and input uncertainty in data assimilation-based crop yield prediction: a comparative study of three crop models and their ensemble	14:00-14:15
Luke Monhollon	LAI Integration to Reconcile Cultivar and Soil Inaccuracies in DSSAT-Maize	14:15-14:30
Luleka Dlamini	Coupling WOFOST with Sentinel-2 data to estimate maize yields under rainfed small-scale farming systems in the Eastern Cape, South Africa	14:30-14:45
Raphael Linker	Combining model-based optimization and data assimilation: The next generation of decision support systems?	14:45-15:00
Xiangming Xiao	Satellite-based modeling of sugarcane photosynthesis and transpiration at the field scale	15:00-15:15
EL Houssaine Bouras (tbc)	Within-field Crop Yield Estimation at High Spatial Resolution through the Assimilation of Sentinel-2 Data into a Crop Growth Model	15:15-15:30

Paper Presentation Session 7: Data and Information Technologies Advances for Ag Modeling Tuesday, June 27th 14:00-15:30 (UTC-4) Session Co-Leaders: Pierre Martre and Walter Baethgen		
Lead Author	Abstract	Timing
Adama Faye, Walter Baethgen (Presenter)	Climate information's translation into agricultural and economic terms to support strategic decisions in crop production: the case of SIMAGRI in Senegal	14:00-14:15
Endalkachew Kebede	A global open-source dataset of monthly irrigated and rainfed cropped areas (MIRCA-OS) for the 21st century	14:15-14:30
Kwang soo kim	COMPASS: An ensemble modeling platform based on containerized crop models	14:30-14:45
Kwang soo kim	GLUEOS: A high performance computing system based on the orchestration of containers for the GLUE parameter calibration of a crop growth model	14:45-15:00
Mohamed Jabloun, Mike Rivington (Presenter)	MySmartFarm: A crop growth monitoring and decision support system for Scottish farmers	15:00-15:15
Pierre Martre	Crop2ML: a framework for crop model component exchange and reuse to increase model reproducibility and accelerate model improvement	15:15-15:30

Paper Presentation Session 8: Livestock, Grasslands and Multi-Cropping Wednesday, June 28th 11:15-12:30 (UTC-4) Session Co-Leaders: Katrien Descheemaeker and Kevin Karl		
Lead Author	Abstract	Timing
Fabiani Denise Bender (Virtual)	ECOSMOS-Forage model for simulating palisadegrass	11:15-11:27
Gatien Falconnier	Sustainable intensification of cereal-based cropping systems in semi-arid sub-Saharan Africa: intercropping or combining cereal and legume sole crops?	11:27-11:39
Greg Kiker	Global Rangeland Modeling Highlights Zones of Challenge and Opportunity for Livestock Production Areas Under Future Climate Change Conditions	11:39-11:51
Katharina Waha	Land use modelling needs to better account for multiple cropping to inform pathways for sustainable agricultural transitions	11:51-12:03
Mariana Rufino	Advancing modelling tools to analyse livestock-grassland-cropland interactions	12:03-12:15
Weldemichael Tesfahuney (Virtual)	Innovative knowledge of rainwater harvesting techniques in semi-arid ecosystems: Maize-bean intercrop productivity and resources use efficiency	12:15-12:27

Paper Presentation Session 9: Crop Model Products in Practical Application		
Wednesday, June 28th 11:15-12:30 (UTC-4)		
Session Co-Leaders: Willingthon Pavan and Naresh Kumar		
Lead Author	Abstract	Timing
Anthony Whitbread	Innovating and scaling risk-reducing measures for farmers and livestock keepers in the drylands	11:15-11:30
Anupam Bhar, Balaji Pokuri (Presenter)	Optimization of small farm holder profit using the MISSION framework's model-predictive in-season irrigation or nitrogen fertilizer scheduling	11:30-11:45
Mara Gabrielli	Development of an integrated system that combines a cropping system model and a tool for the optimisation of manure redistribution	11:45-12:00
Siyabusa Mkuhlani, Meklit Chernet (Virtual)	AgWise: A Collaborative Analytical Framework for Tailored Fertilizer Recommendations	12:00-12:15
Soora Naresh Kumar	Simulation modelling assisted climatic risk adaptation in small-holder farms in India	12:15-12:30

Paper Presentation Session 10A: Projections of Future Crop Productivity		
Wednesday, June 28th 11:15-12:30 (UTC-4)		
Session Co-Leaders: Florian Zabel and Julia Schneider		
Lead Author	Abstract	Timing
Alex Ruane	Initial climate change impacts on crop yields may misinform stakeholders	11:15-11:27
Christoph Müller	Don't mind the yield: central lessons from a decade of AgMIP	11:27-11:39
Mikhail Semenov (Virtual)	Estimating global genetic yield gap by designing crop ideotypes	11:39-11:51
Oleksandr Mialyk	Historical look at crop water productivity: the results of global crop modelling	11:51-12:03
Pierre Martre	Is crop intensification necessary to increase the yield potential of wheat under climate change?	12:03-12:15
Yean-Uk Kim	Methodologies to assess changing climate risks on agroecosystems	12:15-12:27

Paper Presentation Session 10B: Projections of Future Crop Productivity Thursday, June 29th 11:00-12:30 (UTC-4) Session Co-Leaders: Florian Zabel and Julia Schneider		
Lead Author	Abstract	Timing
Davide Cammarano	Impact of projected climate on processing tomato production	11:00-11:18
Leonard Borchert	Change of negative year-to-year agricultural yield extremes under global warming	11:18-11:36
Meijian Yang	Projecting Maize Yield in the US Corn Belt and Ethiopia Using Process-Based Model and Machine Learning Models	11:36-11:54
Paulina Ansa Asante	Climate change impacts on cocoa production in the major producing countries of West and Central Africa by mid-century	11:54-12:12
Sam Rabin (Virtual)	Observation-based sowing dates and cultivars significantly affect yield and irrigation for some crops in the Community Land Model (CLM5)	12:12-12:30

Paper Presentation Session 11: Land and Climate Modeling Wednesday, June 28th 11:15-12:30 (UTC-4) Session Co-Leaders: Audrey Brouillet and Kaela Lucke		
Lead Author	Abstract	Timing
Audrey Brouillet	Attribution and impacts of excessive rainfall and drought on maize yields in low-inputs systems using crop models	11:15-11:27
David Helman	Detecting wheat response to drought under elevated CO2 using remote sensing metrics	11:27-11:39
Kaela Lucke	Land Surface Model Sensitivities and Its Impacts on Land Cover Change in the Northern Great Plains	11:39-11:51
Ligalem Agegn Asres (Virtual)	Effect of Historical Climate Data on Reference Evapotranspiration and Crop Water Requirement for Maize Crop	11:51-12:03
Wenfeng Liu (Virtual)	Safeguarding China's climate spaces for crop production	12:03-12:15
Paulino Omoj Omay (tbc)	Observed Changes and Variability in wet days and Dry Spells over IGAD region of Eastern Africa	12:15-12:27

Paper Presentation Session 12: Water Resources Wednesday, June 28th 11:15-12:30 (UTC-4) Session Co-Leaders: Shichao Chen and Christopher Jung		
Lead Author	Abstract	Timing
Christopher Jung	A land use change model to simulate the global development of irrigated cropland areas	11:15-11:30
Meijian Yang	Coupling high-resolution DSSAT crop model into NASA Land Information System	11:30-11:45
Shichao Chen	Spatial and temporal variability in global irrigation water demand under climate change	11:45-12:00
Yi Yao	The irrigation impact model intercomparison project (IRRIMP)	12:00-12:15
Isaac Olaposi Oladipo (tbc)	Development of Arduino module based automated irrigation management system (AIMS) for optimal water use	12:15-12:30

Paper Presentation Session 13A: Modeling Mitigation and Adaptation Wednesday, June 28th 11:15-12:30 (UTC-4) Session Co-Leaders: Roberto Valdivia and Sonali McDermid		
Lead Author	Abstract	Timing
Gerald (Jerry) Nelson	The limits to adaptation in agriculture: Physics, the chemistry of biology, and human behavior	11:15-11:27
Huey-Lin Lee (Virtual)	Spatial reallocation helps to reduce methane emissions from paddy rice cultivation.	11:27-11:39
Mike Rivington	Assessing risks and opportunities for land use transformations to achieve multiple social and ecological benefits considering climate change impacts	11:39-11:51
Mohammad Ibrahim Khalil	Using Whole Farm Modelling to Inform Land Use Planning for Greenhouse Gas Emissions Mitigation and Offsetting	11:51-12:03
Shelby C. McClelland	Climate 'penalty' on the efficacy of cropland soil mitigation strategies	12:03-12:15
Ipsa Gupta (tbc)	Sustainable management of urban invasions by <i>Broussonetia papyrifera</i> using biochar technology	12:15-12:27

Paper Presentation Session 13B: Modeling Mitigation and Adaptation Thursday, June 29th 11:00-12:30 (UTC-4) Session Co-Leaders: Roberto Valdivia and Sonali McDermid		
Lead Author	Abstract	Timing
Florian Zabel	Modeling global integrative land-use adaptation	11:00-11:15
Lorenzo Villani (Virtual)	Hydrologic and agricultural impacts of climate change and management practices in a Mediterranean catchment	11:15-11:30
Sonali Shukla McDermid	Co-benefits and tradeoffs of agricultural mitigation and adaptation in rice based cropping systems	11:30-11:45
Sotirios Archontoulis	Predicting the Inputs	11:45-12:00
Vellingiri Geethalakshmi	Simulating climate-smart rice production system in south India: DSSAT model improvement	12:00-12:15
Wei Ren	Quantifying Biogeochemical Footprints of Conservation Tillage at Multiple Scales: Perspectives from Climate-Smart Agriculture	12:15-12:30

Paper Presentation Session 14: Machine Learning for Agricultural Applications Thursday, June 29th 11:00-12:30 (UTC-4) Session Co-Leaders: Ron van Bree and Andres Castellano		
Lead Author	Abstract	Timing
Andres Castellano	Machine learning emulators and empirical models combining climate and global crop models for seasonal agricultural production	11:00-11:12
Guiling Wang	Deep Learning Models for Crop Yield Prediction and Comparison with a Process-Based Model	11:12-11:24
Jingye Han	Knowledge-guided machine learning for modeling crop growth dynamics	11:24-11:36
Lily-belle Sweet	Using interpretable machine learning to identify meteorological drivers of crop yield failure	11:36-11:48
Oumnia Ennaji	Application of Machine learning in crop yield prediction.	11:48-12:00
Max Vilgalys (tbc)	Estimating Continuous Treatment Effects in Panel Data using Machine Learning with an Agricultural Application	12:00-12:12
Syeda Anum Masood Bokhari (tbc)	Revolutionizing Food Systems: The Power of New Tools and Technologies	12:12-12:24

Paper Presentation Session 15: Modeling Soils and Carbon		
Thursday, June 29th 11:00-12:30 (UTC-4)		
Session Co-Leaders: Erik Mencos and Apurbo Chaki		
Lead Author	Abstract	Timing
Elnaz Ebrahimi	Modeling maize yield affected by underground Pipeline installation and tillage practices	11:00-11:15
Margarita Garcia-Vila (Virtual)	Representing waterlogging and its effects in crop models: Where are we now and where do we need to go?	11:15-11:30
Mohammad Mamunur Rasid Sarker (Virtual)	Assessing the long-term impact of conservation agriculture on rice-maize systems in Bangladesh under climate change using the APSIM model	11:30-11:45
Prakriti Bista (Virtual)	Simulating the Long-term Impact of Cover Crops on Soil organic Carbon on Semi-Arid Southwestern USA	11:45-12:00
Muhammad Atif (tbc)	Three-Dimensional Structure of Preferential flow and its influencing factors	12:00-12:15
Ritvik Sahajpal (tbc)	Soil Organic Carbon Model Intercomparison Protocol for Sustainable and Regenerative Agriculture	12:15-12:30

Paper Presentation Session 16: New Crop Species Models		
Thursday, June 29th 11:00-12:30 (UTC-4)		
Session Co-Leaders: Louise Busschaert and Jose Guarin		
Lead Author	Abstract	Timing
Ashifur Rahman Shawon	Assessing the Climate Change Impacts on Rye Production in Europe and Canada	11:00-11:18
Louise Busschaert	FAO crop growth model AquaCrop v7.0 for regional simulations: new advances and opportunities	11:18-11:36
Monique Pires Gravina de Oliveira (Virtual)	Hierarchical calibration of a crop growth model of intermediate complexity	11:36-11:54
Ruoling Tang	How to develop vegetable versions based on originally-designed-for-cereals models? Take WOFOST-Chili as an example	11:54-12:12
Zhe Zhang	Modeling food-water system in high-resolution convection-permitting regional climate models	12:12-12:30

Paper Presentation Session 17: Calibration and Crop Model Improvement

Thursday, June 29th 11:00-12:30 (UTC-4)

Session Co-Leaders: Daniel Wallach and Phil Alderman

<i>Lead Author</i>	<i>Abstract</i>	<i>Timing</i>
Balaji Sessa Srikanth Pokuri	Cloud-Hosting of Agricultural Crop Simulator and Optimizer for Calibration and Management Decision Support Systems	11:00-11:15
Daniel Wallach	How to calibrate crop models?	11:15-11:30
Syedreza Amiri (Virtual)	Optimizing agronomic practices for closing chickpea yield gaps in rainfed agroecosystems	11:30-11:45
Bhuvanawri P (tbc)	Assessing the impact of climate variability and change on tomato productivity using DSSAT model	11:45-12:00
Hillary Mugiyo (tbc)	Sorghum management practices in rain-fed production: a crop modelling approach	12:00-12:15
Navinkumar C (tbc)	Calibration and Validation of Drip Irrigated Maize in Semi-Arid Region of Tamil Nadu using CROP WAT and AQUACROP Model	12:15-12:30