
# Paper Presentation Sessions

| **PS1: Regional Integrated Assessments of Risk and Adaptation Options**<br>Tuesday, April 1 – 16:00-17:30 (GMT-6)<br>Session Chair: Roberto Valdivia | | |
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| ***Lead Author*** | ***Abstract*** | ***Timing*** |
| Reza Deihimfard<br>*(Virtual)* | Maize crop could escape from extreme temperatures under arid-based climate types when an optimal combination of cultivar x sowing date applied | 16:00-16:12 |
| Gatien Falconnier | Identifying priority areas for risk management in sub-Saharan Africa: the case study of maize intensification in semi-arid Senegal | 16:12-16:24 |
| Fernando Orduna-Cabrera | Coffee Short-term Yield Prediction using Seq2Seq over an LSTM model | 16:24-16:36 |
| Folorunso M. Akinseye<br>*Presentation by Jacob Emanuel* | Do climate-smart management practices minimize the risk for millet productivity under climate change? Modeling approach | 16:36-16:48 |
| Subash Nataraja Pillai | Integrated Adaptation Strategies for Rice-Wheat based production system at Farmer fields - Present and future Scenario with multiple crop and climate models linked with Socio-Economic situations | 16:48-17:00 |
| Bram Peters<br>*Presentation by Marcos Dominguez Viera* | Foresight for Food Systems Transformation: Experiences with simulation modelling and participatory foresight processes in Bangladesh and Jordan | 17:00-17:15 |
| Bram Peters<br>*Presentation by Monika Zurek, Keith Wiebe, and Johannes Svensson* | Comparing Food Systems Simulation Models: Getting the Use Case Right | 17:15-17:30 |

| **PS2: Improving Crop Models to Capture Seasonal Climate Responses**<br>Tuesday, April 1 – 16:00-17:30 (GMT-6)<br>Session Chair: Kevin Karl | | |
|---|---|---|
| ***Lead Author*** | ***Abstract*** | ***Timing*** |
| Meijian Yang | Paving the way for adapting opportunity crops in Africa through novel climate-crop models | 16:00-16:12 |
| Santiago Cuadra | Application of an ensemble of high-resolution Regional Climate Model simulations for crop yield estimation in southern Brazil | 16:12-16:24 |
| Bruce Kimball *(Virtual)* | Improvement in Soil Temperature Simulation Ability of the DSSAT-CSM Model | 16:24-16:36 |
| Sue Walker | Climate Outlooks Generating Advisories for Indonesian Farmers Science Field Shops | 16:36-16:48 |
| Monique Oliveira | Good practices for crop yield modeling with machine learning: feature design using CY-Bench as an example | 16:48-17:00 |
| Xin Ge | Improving predictions of stomatal conductance and evapotranspiration under combined heat and drought for wheat | 17:00-17:12 |
| Rogerio de S Noia Junior | Simulating wheat growth responses to waterlogging | 17:12-17:24 |

| **PS3: Data Assimilation and Remote Sensing**<br>Tuesday, April 1 – 16:00-17:30 (GMT-6)<br>Session Chair: Jyoti Singh | | |
|---|---|---|
| ***Lead Author*** | ***Abstract*** | ***Timing*** |
| Gabriel Mulero | Machine learning modeling of wheat's LAI using drone-based LiDAR and hyperspectral imagery | 16:00-16:15 |
| Ben Jones | Combining broad and deep datasets to improve the simulation of high-yielding wheat crops | 16:15-16:30 |
| Yuval Sadeh *(Virtual)* | Satellite-Based Field-Scale Yield Estimation in Data-Limited Environments | 16:30-16:45 |
| Baktybek Duisebek | Using satellite-based monitoring system to assess the crop water use across Ili River, Kazakhstan. | 16:45-17:00 |
| Meijian Yang | Integrating Remote Sensing and the DSSAT Model with Near-Real-Time Data Assimilation for Improved Decision Support | 17:00-17:15 |
| Fang Li *(Virtual)* | GlobCropCalendar: a global 0.05º-gridded calendar dataset for major crops from 2000 to 2021 | 17:15-17:30 |

| **PS4: Modeling Mitigation and Soils**<br>Tuesday, April 1 – 16:00-17:30 (GMT-6)<br>Session Chair: Pierre Martre | | |
|---|---|---|
| ***Lead Author*** | ***Abstract*** | ***Timing*** |
| Nathan Torbick *(Virtual)* | Scaling rice dMRV impacts across diverse landscapes | 16:00-16:12 |
| Oumnia Ennaji | The assessment of soil variables relative importance for cereal yield prediction under rainfed cropping system in Morocco | 16:12-16:24 |
| Antoine Couëdel | Soil fertility loss exacerbates climate change impact on maize yield in sub-Saharan Africa, a multi-model study | 16:24-16:36 |
| Pierre Martre | Enhancing agricultural system predictions through model component exchange: A case study on soil temperature models using Crop2ML< | 16:36-16:48 |
| Mariaelisa Polsinelli | Process-Based Modelling for N2O Emission Estimation at the Field-Scale in Atlantic Canada | 16:48-17:00 |
| Toshihiro Hasegawa *(Virtual)* | Estimating Methane Emissions and GHG Mitigation: New Opportunities for the AgMIP Rice Team | 17:00-17:12 |
| Robert Beach | Marginal Abatement Cost Curves for Reducing Non-CO2 Greenhouse Gas Emissions from Global Agricultural Production through 2080 | 17:12-17:24 |

| **PS5: Food Systems, Trade, and Diets in a Changing World**<br>Wednesday, April 2 – 11:30-13:00 (GMT-6)<br>Session Chair: Mario Herrero | | |
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| ***Lead Author*** | ***Abstract*** | ***Timing*** |
| Nathaniel Springer | Measuring the sustainability footprint of the U.S. food and agriculture system with the FoodS3 model: new approaches to quantify system resilience | 11:30-11:45 |
| Maksym Chepeliev | Bending the curve of food loss and waste (FLW) generation requires coupling global dietary shifts with targeted FLW reduction policies | 11:45-12:00 |
| Siwa Msangi *(Virtual)* | The importance of aquaculture in global analyses of food & energy futures: the competition for feed | 12:00-12:15 |
| Ron Sands *(Virtual)* | Global to State Modeling Framework for Agriculture | 12:15-12:30 |
| Donagh Hennessy | The use of agriculture-economic models in food system assessments: a multi-model comparison of estimates, data sources, aggregations, and model structures | 12:30-12:45 |
| Maksym Chepeliev | How global transition to healthier diets might impact agricultural trade | 12:45-13:00 |

| **PS6: Data and Information Technologies Advances for Agricultural Modeling**<br>Wednesday, April 2 – 11:30-13:00 (GMT-6)<br>Session Chair: Monique Oliveira | | |
|---|---|---|
| ***Lead Author*** | ***Abstract*** | ***Timing*** |
| Chenzhi Wang | Climatic drivers of crop yield variability and failure in SSA | 11:30-11:42 |
| Xinxin Chen | Bridging literature and models: a workflow for harmonizing agricultural datasets for model calibration using AI | 11:42-11:54 |
| Ahmed Kheir<br>*(Virtual)* | Enhancing Agroforestry Simulations through the Integration of Machine Learning and Hi-sAFe process-based model | 11:54-12:06 |
| Mark Lundy | Nitrogen nutrition index for global N2O emissions monitoring | 12:06-12:18 |
| Benjamin Leroy<br>*Presentation by Frank Ewert* | Harnessing FAIR data management to streamline data integration for crop model applications | 12:18-12:30 |
| Allard de Wit | AgERA5 v2: an improved dataset on daily global weather since 1979 for applications in agriculture | 12:30-12:42 |
| Michiel Kallenberg<br>*Presentation by Pratishtha Poudel* | CY-Bench: A comprehensive benchmark dataset for sub-national crop yield forecasting | 12:42-12:54 |

| **PS7: Modeling Dryland and Other Non-Traditional/Opportunity Crops**<br>Wednesday, April 2 – 11:30-13:00 (GMT-6)<br>Session Chair: Subash Nataraja Pillai | | |
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| ***Lead Author*** | ***Abstract*** | ***Timing*** |
| Zaid Bello | Modelling climate impact on pigeon pea production in a semi-arid area of South Africa | 11:30-11:41 |
| Soeren Lindner<br>*(Virtual)* | Predicting short-term yield changes in perennials for economic risk analysis using machine learning: A case study of agroforestry coffee production in 4 states of Mexico | 11:41-11:52 |
| Krishna Devkota | A Novel Date Palm Yield Modeling Using APSIMx and AquaCrop (Model Development and Intercomparison) | 11:52-12:03 |
| Kenneth J. Boote | Modeling Under-utilized Crops in DSSAT – Approaches and Examples | 12:03-12:14 |
| Jacob Emanuel Joseph | Linking farmer knowledge with modelling for developing climate risk strategies for crop-livestock systems in semi-arid Tanzania. | 12:14-12:25 |
| Tony Carr | Building Resilience to Climate Change: The Potential of Neglected and Underutilised Crops in Mitigating Crop Failure and Improving Nutritional Diversity in South Africa | 12:25-12:36 |
| Zenebe Mekonnen Adare<br>*(Virtual)* | Soil Fertility Dynamics and Xanthomonas Wilt Incidence in Enset (Ensete Ventricosem) Based Farming at Chencha, Southern Ethiopia | 12:36-12:47 |
| Dilys MacCarthy | Towards a Food Secure Future under Changing Climate in Ghana: The Role of Opportunity Crops | 12:47-12:58 |

| **PS8: Land, Water, and Climate Modeling**<br>Wednesday, April 2 – 11:30-13:00 (GMT-6)<br>Session Chair: Sonali McDermid | | |
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| ***Lead Author*** | ***Abstract*** | ***Timing*** |
| Audrey Brouillet<br>*(Virtual)* | Increasing rainfall locally offsets the adverse historical global warming effect on maize yields in low-input systems in Africa according to crop models | 11:30-11:45 |
| Florian Zabel | CropSuite – A new comprehensive open-source crop model: Climate change impact assessment for 48 crops in Africa considering climate variability | 11:45-12:00 |
| Thomas Oberleitner | Identifying Drivers of Yield Anomalies in Global Gridded Crop Models Using Machine Leaning | 12:00-12:15 |
| Heidi Webber | Systematic underestimation of daily water use in wheat crop models: the case for semi-arid and Mediterranean environments | 12:15-12:30 |
| Edna Molina Bacca<br>*Presentation by Hermann Lotze-Campen* | Land-use pattern projections and their uncertainty under global change | 12:30-12:45 |
| Kevin Karl | Participatory Modeling of Climate-Adaptive Agricultural Practices in the New York City | 12:45-13:00 |

| **PS9: Landscape-Scale Modeling and Crop Losses**<br>Thursday, April 3 – 11:00-12:30 (GMT-6)<br>Session Chair: José Maurício Fernandes | | |
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| ***Lead Author*** | ***Abstract*** | ***Timing*** |
| Yiwei Jian | Towards attribution of the 2022 European maize failures to anthropogenic climate change | 11:00-11:12 |
| Fekremariam Mihretie | Productivity and Resource Use Efficiency of Legume-Based Cropping Systems in Southeastern Australia | 11:12-11:24 |
| Lennart Jansen | Attributable and projected economic losses for German agricultural production due to climate change using an integration of crop and land use models | 11:24-11:36 |
| Willingthon Pavan<br>*(Virtual)* | Simulating Fusarium Head Blight Risk and Mycotoxin Contamination Using an Integrated DSSAT-GDM Framework | 11:36-11:48 |
| Jose Guarin<br>*(Virtual)* | Simulating impacts of tropospheric ozone and climate change on global agricultural production | 11:48-12:00 |
| Jack Rawden | Mapping the global distribution of pollinator dependence in wild plants | 12:00-12:12 |
| Henrique Haas<br>*(Virtual)* | Integrating Ecosystem Dynamics and Hydrologic Modeling to Assess Climate Change | 12:12-12:24 |

| **PS10: Developing Crop and Livestock Model Products for Practical Application**<br>Thursday, April 3 – 11:00-12:30 (GMT-6)<br>Session Chair: Ken Boote | | |
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| ***Lead Author*** | ***Abstract*** | ***Timing*** |
| Ranju Chapagain *(Virtual)* | Enabling climate resilience through integrated economic, environmental and social adaptation | 11:00-11:10 |
| Samar Attaher | Integrated Data-Fusion Platform for Smart Nitrogen Management of Wheat | 11:10-11:20 |
| Alex Ruane *(Virtual)* | A Virtual Agricultural Innovations Laboratory (AVAIL) – combining NASA resources for multi-perspective decision support for Iowa Corn and beyond | 11:20-11:30 |
| Peter Mwangi Muchiri *(Virtual)* | Aquacrop model approach and Geographic Information System (GIS) for enhanced decision making in Climate-Smart Agriculture interventions, Kitui County, Kenya | 11:30-11:40 |
| Siyabusa Mkuhlani | AgWise: Spatio-temporal yield prediction for sowing and variety recommendations in Ghana | 11:40-11:50 |
| Krishna Devkota | Optimizing Forage Crop Production Under Open-Field Conditions: A Comprehensive AquaCrop Simulation and Sensitivity Analysis | 11:50-12:00 |
| Felix Bruckmaier | Data-driven Irrigation Management for Everybody? - ¡Dime! | 12:00-12:10 |
| Balaji Sesha Srikanth Pokuri *(Virtual)* | EnMISSION : Environmentally Aware Model Predictive In-Season Scheduling of Irrigation and/or Nitrogen fertilizer | 12:10-12:20 |
| Kenneth J. Boote | Adapting the CROPGRO-Perennial-Forage-Model to Simulate Napiergrass | 12:20-12:30 |

| **PS11: Science of Calibration, Configuration, and Ensembles**<br>Thursday, April 3 – 11:00-12:30 (GMT-6)<br>Session Chair: Daniel Wallach | | |
|---|---|---|
| ***Lead Author*** | ***Abstract*** | ***Timing*** |
| Mercy Appiah *(Virtual)* | Linking genetic information (QTLs) to crop model parameters to improve prediction of ecophysiological traits for barley ideotype design | 11:00-11:18 |
| Daniel Wallach | A calibration protocol for crop models | 11:18-11:36 |
| Samuel Buis | Software solutions for crop model calibration: The use of CroptimizR and CroPlotR in AgMIP | 11:36-11:54 |
| Cyrille Ahmed Midingoyi | A Distributed Framework for Gridded Crop Model Ensembles : Advancing Agricultural Applications and Addressing Computational Challenges | 11:54-12:12 |
| Hossein Zare | A Scalable Approach to Grassland monitoring: Remote Sensing and Process-Based Modeling | 12:12-12:30 |

| **PS12: Projections of Future Crop Productivity**<br>Thursday, April 3 – 11:00-12:30 (GMT-6)<br>Session Chair: Chenzhi Wang and Xuhui Wang | | |
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| ***Lead Author*** | ***Abstract*** | ***Timing*** |
| Vidur Mithal | How do climatically-driven low crop yields change with global warming levels? | 11:00-11:12 |
| Christian Folberth | Informing crop growing season adaptation using crop model emulators | 11:12-11:24 |
| Asmae Meziane *(Virtual)* | Calibrating CERES-Barley for Ideotyping Climate-Smart Spring Barley under German Growing Environments | 11:24-11:36 |
| Raniero Della Peruta | Regional-scale, process-based modelling of arabica coffee yields under future climate scenarios | 11:36-11:48 |
| Babacar Faye | Evaluating crop yield variability in Senegal using machine learning approaches | 11:48-12:00 |
| Jose Guarin *(Virtual)* | Evidence for increasing global wheat yield potential | 12:00-12:12 |
| Jonas Jägermeyr | Global Gridded Crop Modeling Intercomparison | 12:12-12:24 |

| **PS13: Food Systems, Nutrients, and Health**<br>Thursday, April 3 – 11:00-12:30 (GMT-6)<br>Session Chair: Nathaniel Springer | | |
|---|---|---|
| ***Lead Author*** | ***Abstract*** | ***Timing*** |
| Ignacio Pérez Domínguez | Economic Assessment of the Potential Contribution of Carbon Farming to the EU's 2050 Climate Neutrality Targets | 11:00-11:15 |
| Ahmed Kheir *(Virtual)* | Optimizing Spatial Simulations of Wheat Yield and Nutritional Quality through the Integration of CMs, RS, and ML | 11:15-11:30 |
| Marco Springmann *(Virtual)* | Developing scenarios of healthy and sustainable diets for food system assessments | 11:30-11:45 |
| Robert Beach | Impacts of climate change on nutrient availability for women of reproductive age | 11:45-12:00 |
| Kirsten Verburg *(Virtual)* | Towards global system perspectives on the possible benefits of biological nitrification inhibition using agricultural systems modelling | 12:00-12:15 |
| Gianmaria Tassinari | A Deep-Dive of the EAT-Lancet 2 Global Diet into European Food Systems | 12:15-12:30 |