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82nd International Conference on Agricultural Engineering

LAND.TECHNIK AgEng 2025

The Forum for Agricultural Engineering Innovations

The following topics will be discussed:

- **Tractors, Combine Harvesters, Design of Agricultural Machinery**
- **Safety for Autonomous Vehicles**
- **Sensors, Harvesting Technologies**
- **Robotics and Automation, Testing**
- **Power Trains, Electric Drives, Alternative Fuels**
- **Precision Agriculture, Cultivation and Seeding, Laser and Weed Control**
- **Artificial Intelligence, Digital Simulation**
- **Innovative Applications**

Only online!

AGRITECHNICA ADMISSION TICKETS

All participants have the possibility to buy Tickets for AGRITECHNICA for 9th, 10th or 11th November 2025

Scientific Chairman

Prof. Dr.-Ing. Cornelia Weltzien, Head of Department and Chair of Agromechatronik at TUB, Leibniz Institute for Agricultural Engineering and Bioeconomy (ATB), Potsdam, Germany

Opening Event of:

AGRITECHNICA THE WORLD'S NO.

Official Partner:

EurAgEng

SYSTEMS COMPONENTS

An event organized by VDI Wissensforum GmbH
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November 7th–8th 2025,
Hannover, Germany, Exhibition Ground

1st Conference Day
Friday, 7 November 2025

10:00 Registration

Plenary Session (Room 1A and 1B)

12:00 Welcoming Address and Opening Remarks: VDI MEG
Dr. Markus Demmel, Chairman of Max Eyth Society for Agricultural Engineering (VDI-MEG), Freising, Germany

12:10 Welcoming Address and Opening Remarks: EurAgEng
Prof. Dr. Barbara Sturm, European Society for Agricultural Engineers (EurAgEng) Potsdam, Germany

12:20 Welcoming Address and Opening Remarks: DLG
Hubertus Paetow, President, Deutsche Landwirtschaft-Gesellschaft (DLG), Frankfurt, Germany

12:30 VDI-Initiative „Zukunft Deutschland 2050" – Engineers shape the future now!
Dipl.-Ing. Adrian Willig, Director and Managing Member of the Executive Committee of the VDI – The Association of German Engineers, Düsseldorf, Germany

13:00 Coffee Break

Power Trains: Electric Drives and Alternative Fuels
(Room 1A)
Moderation: **Thomas Fedde,** Vice President Service Function Powertrain Development, CLAAS Industrietechnik GmbH, Paderborn, Germany

Harvesting Technologies and Efficiency (Room 1B)
Moderation: **Johann Witte M. Sc.,** Head of Advanced Development Process Automation, CLAAS Selbstfahrende Erntemaschinen GmbH, Harsewinkel, Germany

13:30 B100-Fuel in AG Applikations on STAGE-V basis – Time for a Renaissance of „Biodiesel" in the AG-sector?
Fabian Wohlfahrt M. Sc., Strategic Program Manager, CLAAS Selbstfahrende Erntemaschinen GmbH, Harsewinkel, Germany, Dr. Johannes Ettl, Technologie und Förderzentrum Straubing, Germany

The Potential of Remote Sensing and NIRS for Protein-Based Precision Harvesting in Organic Wheat
Anna Hilda Prasun M. Sc., Scientific assistant, Section of Agricultural Engineering, Georg-August-Universität Göttingen, Germany, Prof. Frank Beneke, University of Göttingen, Germany

14:00 Hybrid Telehandler – Fuel Flex
Matteo Tondo M. Eng., Piero Pellizzari, CNH Industrial Italia S.p.A., Lecce, Italy

Harvesting Optimization for efficient and high-quality Vegetable Harvest
Sabine Havermans M. Sc., System Engineer, Oxbo, Roosendaal, The Netherlands; Jente Klein-Holkenborg M. Sc., Wageningen University and Research, Wageningen, The Netherlands

14:30 A Fuel Cell Tractor in Practice – Lessons Learned with Fendt HELIOS
Dipl.-Ing. Wolfgang Breu, Team Lead, Research and Advanced Engineering, AGCO GmbH, Marktoberdorf, Germany

Optimal Closed-Loop Control for active Discharge Chute Stabilization in self-propelled Forage Harvesters
John Penner M. Sc., Software Engineer, Stefan Schiewer B. Sc. (MBA), CLAAS Selbstfahrende Erntemaschinen GmbH, Harsewinkel, Germany

15:00 Electric Axle Driveline Prototype for Tractors
Samuel Willems M. Sc., Development Engineer, Dipl.-Ing., Raphael Himmelsbach, ZF Friedrichshafen AG, Friedrichshafen, Germany

AI-Yield Forecasting in the Connected Grasland Harvesting Process
Matthias Eichlseder M. Sc., agronomy, Product Manager Smart Farming, Stefan Ackermann, PÖTTINGER Landtechnik GmbH, Grieskirchen, Austria

15:30 Coffee Break

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13:00 Coffee Break

Sensors & Sensor Simulation (Room 2)
Moderation: Dr.-Ing. Max Bouten, Product Director, Kverneland Group Mechatronics B. V., Nieuw-Vennep, The Netherlands

13:30 Why now is the time to think about Imaging Radar to complement or replace Optical Perception Sensors
Dipl.-Ing. (FH) Michael Weigel, Global Business Manager Agriculture, Daniel Ritzmann M. Sc. (ETH), Baumer Electric AG, Frauenfeld, Switzerland

14:00 Concept and Implementation of a real-time capable LIDAR Simulation in the Agricultural Domain
Dr. Nico Rüddenklau, Senior Project Engineer, Dr. Matthias Götte, Thomas Leßmann, dSPACE GmbH, Paderborn, Germany

14:30 Optimizing Real-Time LiDAR Simulation with Reflectivity Measurements for Deep Learning Semantic Segmentation in Autonomous Light Tillage
Mirco Felske, M. Sc., PhD Candidate, Jannik Redenius M. Sc., CLAAS E-Systems GmbH, Dissen, Germany

15:00 Unmanned aerial system-based lane mapping for autonomous mobile robots in precision horticulture
Tjark Schütte M. Sc., Research Associate, Chair of Agromechatronics, Technische Universität Berlin, Germany

Testing: Test Environments & Applikations (Room 3)
Moderation: Prof. Dr.-Ing. Christian Meltebrink, Professor for autonomous, collaborative agricultural and sensor systems, Osnabrück University of Applied Sciences, Osnabrück, Germany

Environment for Testing Agricultural Robots in the Field with Ground Truth 3D Object Tracking
Daniel Barrelmeyer M. Sc., Research Assistant, Faculty of Engineering and Computer Science, Prof. Dr. Stefan Stiene, University of Applied Science Osnabrück, Germany

Advancements in Virtual Validation and Safety Certification for Autonomous Agricultural Machinery
Dr.-Ing. Pablo Antonino, Department Head, Jannis Jung, Priom Biswas, Fraunhofer IESE, Kaiserslautern, Germany

A Comprehensive Tool Set for Development and Testing of Perception Systems in Agriculture
Christoph Krause M. Sc., Researcher, Deutsches Forschungszentrum für Künstliche Intelligenz GmbH, Osnabrück, Germany, Dr. Sebastian Röttgermann, LEMKEN GmbH & Co. KG, Alpen, Germany

Standardized Testing of Sensor-Based Object Detection for Autonomous Agricultural Machinery
Prof. Dr. Georg Happich, Dr. Nicolas Hummel, Faculty of Mechanical Engineering, University of Applied Sciences Kempten, Germany

15:30 Coffee Break

Tractors, Self-Propelled Agricultural Machinery (Room 1A)

Moderation: Roger Stirnimann, Dozent Agrartechnik, Berner Fachhochschule für Agrar-, Forst- und Lebensmittelwissenschaften HAFL, Zollikofen, Switzerland

16:00 Improving User Ergonomics in Tractors with Alternative Steering Input Methods
Valentin Ernst M. Sc., Research assistant, Institute of Agricultural Engineering, University of Hohenheim, Stuttgart, Germany

16:30 Forage Harvester Development within the Deere Dairy & Livestock Production System
Dipl.-Ing. Gerd Schörry, Manager Forage Harvesting Engineering, John Deere Werk Zweibrücken, Germany

17:00 Seeds of Innovation: Equipping Next-Gen Agricultural Engineers with Techno-Agricultural Skills
Prof. Dr. Julius Schöning, Full Professor, Faculty of Engineering and Computer Science, Prof. Dr. Clemens Westerkamp, Hochschule Osnabrück, Germany

Work Quality Analysis and Precision Agriculture (Room 1B)

Moderation: Dr. Thilo Steckel, Research Coordinator, Claas E-Systems GmbH, Dissen, Germany

Working Quality of UAV and Standard Slug Pellets Spreaders
Dipl. Ing. Markus Sax, Researcher, Dr. Thomas Anken, Agroscope, Ettenhausen, Switzerland

Effect of the Granule Outlet Angle on the Spread Pattern of a Centrifugal Fertilizer Spreader
Prof. Dr. Dimitrios S. Paraforos, Agricultural Engineering, Dr. Galibjon M. Sharipov, Hochschule Geisenheim, Germany

Impact of Fertilizer Distribution Accuracy on Quality Parameters in Grain Production
Steffi Fock M. Sc., Product Engineer PhD, Dr. Carsten Struve, John Deere GmbH & Co. KG, Kaiserslautern, Germany

17:30 Break

18:00 Plenary Session – Awarding of the VDI-MEG Prizes/Awarding of the EurAgEng Award of Merit (Room 1A and 1B)

19:00 Get-together Dinner

Official Conference Language

The official language of the conference will be English.
Simultaneous translation will not be available.

The Conference is Supported by

Deutsche Landwirtschaft-Gesellschaft (DLG), Frankfurt/M., Germany
Deutsche Messe AG, Hannover, Germany

Agritechnica Admission Tickets

Participants have the opportunity to buy tickets for the "Innovation & Press Day" on 09.11. 2025 or the "AgriBusiness Days" on 10. and 11.11.2025 with a discount of 25 %. We will send the **promotion code** one week prior to the conference by email. Payment by Creditcard or Paypal.
There will be **no** disposal during the conference.

Only online!

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Exhibitor

- Altair Engineering GmbH
- Antriebstechnik Roth GmbH
- Sontheim Industrie Elektronik GmbH
- Transformations-Hub MIAMy

Artificial Intelligence and Digital Simulations (Room 2)

Moderation: Burkhard Sagemüller, CTO, Head of R&D, LEMKEN GmbH & Co KG, Alpen, Germany

16:00 **AI Powered Full Vehicle System Simulations reduces Physical Testing**
Giuseppe Gullo, Mechanical Engineer, FEA Design Analysis Engineer, CNH ITALIA SPA, Modena, Italy

16:30 **AI-Enabled Edge Vision for Optimal Furrow Quality and Seeding Efficiency**
Professor Ajay Sharda, Professor and Director, Sid Sidharth M. Sc., Institute for Digital Ag and Advanced Analytics, Kansas State University, Manhattan, USA

17:00 **Towards Reliable Deep Learning Models for Plant Species Identification in Diverse Real-World Scenarios**
Deepak Hanike Basavegowda M. Sc. PhD, Researcher, Prof. Dr.-Ing. Cornelia Weltzien, Leibniz-Institut für Agrartechnik und Bioökonomie e. V. (ATB, Potsdam), Potsdam, Germany

Innovative Applikations (Room 3)

Moderation: Dipl.-Ing. Herbert Coenen, Uniparts India Ltd., Noida, India

Ensuring Desired Work Quality and Efficiency by Automation of Chopping Drum Condition Monitoring
Dennis Neitemeier M. Sc., Development Engineer, **Dipl. -Ing. (FH) Christian Cord-Kruse,** CLAAS Selbstfahrende Erntemaschinen GmbH, Harsewinkel, Germany

Boosting Productivity on large Square Balers
Kenny Nona PhD, Process automation on hay and forage equipment, CNH, Zedelgem, Belgium, Dipl.-Ing. (FH) Felix Ramünke, CNH Deutschland GmbH, Germany

Integrating Farming Practices into Vertically Mounted Agrivoltaic Systems: Planning and Operational Challenges
Prof. Dr. Karl Wild, University of Applied Sciences Dresden, Germany, Prof. John K. Schueller, University of Florida, Gainesville, USA

17:30 Break

18:00 Plenary Session – Awarding of the VDI-MEG Prizes/Awarding of the EurAgEng Award of Merit (Room 1A and 1B)

19:00 Get-together Dinner

SYSTEMS & COMPONENTS

SYSTEMS & COMPONENTS
will again be the B2B marketplace for the international agricultural machinery supplier industry and the entire mobile machinery sector during AGRITECHNICA. In halls 15, 16 and 17, more than 800 exhibitors will display their latest products and services, from drive technology and engines, hydraulics, vehicle electronics & electrics to vehicle cabs, ag electronics, and wear/spare parts.

Under the guiding theme **"Touch Smart Efficiency"**, engineers, developers, system integrators, procurement managers, and others meet here to explore the latest developments and innovations. On Sunday, November 9 at 17:00 development engineers will present their choice for the S&C Trophy Award at the S&C Expert Stage in Hall 17. The Expert Stage will also be the place to be November 10-14 for select expert panel discussions and technical talks about the latest solutions to OEM challenges.

Young Professionals meet VDI-MEG (Room)

07.11.2025 15:00–17:30

Join us for an informational and networking afternoon session **"Young Professionals meet VDI-MEG".**

The program will describe various VDI-MEG activities and gives the unique opportunity to meet members from VDI-MEG.

Max Eyth Society for Agricultural Engineering (MEG) represents a technical division of the Association of German Engineers (VDI).

The short presentations will be followed by an informal **social networking session.**

Learn more about VDI-MEG and find out how you can get involved with this organization who are promoting the profession of Agricultural Engineering and the people who serve it.

2nd Conference Day
Saturday, 8 November 2025

Power Train Efficiency and Economy (Room 1A)
Moderation: **Dipl.-Ing. Andreas Roth,** CEO, Antriebstechnik-Roth GmbH, Much, Germany

08:30 **Enhancing Track System Efficiency for the Future of Electrified Agricultural Vehicles**
Yves Sauvageau P. Eng. MBA, Ag. Technical Expert, P. Eng., Pierre-Yves Pépin, Track Systems Engineering, Soucy Track Systems, Drummondville (Quebec), Canada

09:00 **Optimizing Tractor Traction Performance using Altair EDEM 3D Simulations of Tyre Contact Area and Rolling Resistance**
Lemuel Srinivasan M. E., Automobile Engineering, Senior Lead Engineer – Tractor Performance Simulation CoE, Mahindra & Mahindra Ltd, Chennai, Tamil Nadu, India, Prasad Avilala, Altair Engineering India, Bengaluru, India

09:30 **Potential for Reducing CO_2 in a Hydraulic Drive System for self-propelled Harvesters**
Dr.-Ing. Ansgar Heilig, Head of Engineering Drive Technology, Christian Biemann, Grimme Landmaschinenfabrik GmbH, Damme, Germany

10:00 **Enhancing Tractor Efficiency with Very High Flexion Tyres**
Prof. Michele Mattetti, PhD, Professor, Department of Agricultural and Food Sciences Università di Bologna, Italy

10:30 **Coffee Break**

Technology for Combine Harvesters (Room 1A)
Moderation: **Prof. Dr.-Ing. Stefan Böttinger,** Professor for Agricultural Engineering, University of Hohenheim, Institute of Agricultural Engineering, Stuttgart, Germany

11:00 **Enhancing Harvest Automation with Advanced Header View System**
Mathias Poulsen, M. Sc., Design Engineer RDP, Dan Hermann, Control Architect and Ph.D., AGCO, Innovation Center Randers, Denmark

11:30 **Alternative Particle Simulation Methods for Combine Residue Management**
Dipl.-Ing. Moritz Peter Josef Schaller, Project Engineer, AGCO A/S – Innovation Center Randers, Denmark

12:00 **New Approach for Weed Seed Separation and Devitalization in Combine Harvesters for increased Field Hygiene and less Weeds**
Dipl.-Ing. Samuel Pantke, Research Associate, Chair of Agricultural Systems and Technology, Technische Universität Dresden, Germany

12:30 **Corn Header Automation for Combine Harvesters**
Jethro Martin, Master of Mechanical Engineering, Development Engineer, CNH-Industrial, New Holland, USA

13:00 **Lunch Break**

Cultivation and Seeding (Room 1B)
Moderation: **Dipl.-Ing. Christian Rechberger,** Agricultural process engineering, HBLFA Francisco Josephinum, Wieselburg, Austria

Automated Tillage for Disturbance-Free Operation: Enhancing Work Quality and Process Stability in Precision Agriculture
David Albrecht B. Eng., Development Engineer, Dr.-Ing. Sebastian Röttgermann, LEMKEN GmbH & Co. KG, Alpen, Germany

Autonomous Field Robots for Soil-Smart Farming: Innovations, Challenges, and Industry Pathways
Dr. Kathrin Grahmann, Junior Research Group Leader, Prof. Dr.-Ing. Cornelia Weltzien, Leibniz Centre for Agricultural Landscape Research (ZALF), Müncheberg, Germany

Automation in Air Seeder Technology
Dipl. Ing. (FH) Christian Gotzen, Engineering Precision Planters and Direct Seeders, Christof Nepicks, LEMKEN GmbH & Co.KG, Alpen, Germany

Laboratory Tests for Friction Reduction in Plowing by Air Lubrication
Julius Ignatz Wendling M. Sc., PhD Candidate, Prof. Dr. agr. Habil. Heinz Bernhardt Chair of Agricultural Systems Engineering, Technische Universität München, Freising, Germany

Optimisation of Agricultural Applications (Room 1B)
Moderation: **Prof. Dr. Christina Umstätter,** Head of Thünen Institute of Agricultural Technology, Braunschweig, Germany

Enhancing Harvest Operations through Interoperable Vehicle Platooning for Unloading
Kevin Bundschuh M. Sc., Project Engineer, AGCO GmbH, Marktoberdorf, Daniel Titkemeier, M. Sc., CLAAS Selbstfahrende Erntemaschinen GmbH, Harsewinkel, Germany

Operational Time Requirements of Autonomous Field Robots in Soil Tillage and Sowing
Ines Mühlbachler, Research Associate, Innovation Farm, Josephinum Research, Wieselburg, Austria, Franz Handler, BLT Wieselburg, Austria

Paving the Way to Optimal Autonomy and Teleoperation Solutions for Agricultural Vehicles
Ing. Dominik Brunner, Lead Engineer Integration & Validation, AVL List GmbH, Steyr, Austria

Sensor-Based Multi-Modal Anomaly Detection for Small Autonomous Agricultural Robots
Dipl.-Ing. Sebastian Gruber, Agricultural Technology & Digital Farming, Fachhochschule Wiener Neustadt GmbH, Wieselburg, Austria, Dipl.-Ing. Helmut, Steinkellner, Josephinum Research, Wieselburg, Austria

2nd Conference Day
Saturday, 8 November 2025

Synthetic Data and AI based Quality Assessment (Room 2)
Moderation: Dipl.-Ing. Andreas Möller, Managing Director, ADVES GmbH & Co. KG, Goldenstedt, Germany

08:30 **A flexible Framework for low-Cost Rapid Generation of high-Quality Synthetic Datasets for Agricultural Environments**
Filip Slezak M. Sc., Industrial PhD Student, Morten Stigaard Laursen, PhD, AGCO A/S, Randers, Denmark

09:00 **Using Synthetic Data and Artificial Intelligence for Optimizing Tillage Process Quality Measurement**
Marina Graf M. Sc., Project Engineer, Research & Advanced Engineering, AGCO GmbH, Marktoberdorf, Germany, **Silko Schulpius M. Sc.,** AGCO GmbH, Wolfenbüttel Germany

09:30 **Real-time Monitoring and Controlling of Kernel Processing Quality on Forage Harvesters**
Dr. Tom Leblicq, Innovation manager Hay & Forage Europe products, Dr. Mathias Born, CNH Industrial Belgium NV, Zedelgem, Belgium

10:00 **Estimating Corn Silage Processing Score in real-time with Machine Learning and Computer Vision**
Albert Daugbjerg Christensen, M. Sc., Project Engineer, Annika Diekjobst, Sr. User Experience Designer, AGCO, Innovation Center Randers, Denmark

10:30 Coffee Break

Laser and Weed Control (Room 2)
Moderation: Christoph Stumpe M. Sc., Research Associate, Fundamentals of Agricultural Engineering, University of Hohenheim, Stuttgart, Germany

11:00 **Development and Evaluation of an Innovative Laser System for Precise Intra-Row Weed Control in Seeded Vegetable Crops as Part of the JaetRobi Project**
Dr.-Ing. Ali Jalali, Scientist, Agromechatronics, Leibniz Institute for Agricultural Engineering and Bioeconomy (ATB), Potsdam, Germany

11:30 **A Feedback Control Architecture for Low-Cost Lasers and Improved Operational Efficiency in Laser Weed Control**
Daniel Klöser M. Sc., Scientific Assistant, Leibniz Institute for Agricultural Engineering and Bioeconomy (ATB), Potsdam, Germany

12:00 **Mechanical Removal of Bolters in Sugar Beet. A Study of required Conditions and the technical Feasibility.**
Steffen Wermers M. Sc., PhD Student, Department of Mechanical Engineering, Prof. Dr.-Ing. Manfred Große Gehling, University of Applied Sciences Münster, Steinfurt, Germany

12:30 **Requirements for Plant specific Interventions in Row Crop Fields and Development of the BonnBot**
Dr.-Ing. Alireza Ahmadi, Dr. Oliver Schmittmann, Institute of Agricultural Engineering, University of Bonn, Germany

13:00 Lunch Break

Safety for Autonomous Vehicles (Room 3)
Moderation: Dr.-Ing. Tobias Nothdurft, Manager, Research & Advanced Engineering, Premium Tractors, AGCO GmbH, Marktoberdorf, Germany

Cybersecurity Standards for Agricultural Machinery: How can Secure Farming Benefit from Automotive Security Best Practices?
Divith Bajaj M. Sc., Senior Consultant, Vector Consulting Services GmbH, Stuttgart, Germany

Radar-Enhanced Geofencing to Ensure Safe Field Boundaries in partially GNSS-Degraded Agricultural Environments
Tommy Ertbølle Madsen M. Sc., CEO and Cofounder, Rolando Esquivel, Christian Metz, Esteban Zamora, AgriRobot, Lyngby, Denmark

Why robust AI combined with Multi-Modal Sensor Fusion is the path to safe and highly available autonomy in agriculture
Dr. Stephan Matz, CEO/COO, driveblocks GmbH, Munich, Germany

Holistic Review of Safe Environment Perception Development to Achieve Autonomy in Agriculture
Magnus Komesker M. Sc., Research Assistant, Dr.-Ing. Christian Meltebrink, University of Applied Science Osnabrück, Germany

Communication and Interoperability in Agriculture (Room 3)
Moderation: Prof. Dr. Georg Happich, Faculty of Mechanical Engineering, University of Applied Sciences Kempten, Germany

High Speed ISOBUS: Standardizing Communication and Diagnostics for Next-Generation Machinery
Dr. rer. nat. Boris Böhlen, Product Manager, Sales, DSA Daten- und Systemtechnik GmbH, Aachen, Germany, Dipl.-Ing. (FH) Bruno Klöpper (MBA), KRONE Business Center DigITal GmbH & Co. KG, Spelle, Germany

Agricultural Interoperability Network – Enrolling a Data Space
Slawi Stesny M. Sc., Sr. Product Manager Connectivity and Data Management, AGCO GmbH, Marktoberdorf, Germany, Norbert Schlingmann, Agricultural Industry Electronics Foundation e. V. (AEF), Frankfurt, Germany

AEF – Digital Camera Systems – Enabling Seamless Video Distribution and Device Interoperability through High Speed ISOBUS
Niklas Niebrügge M. Sc., Development Engineer, ANEDO GmbH, Barnstorf Eydelstedt, Germany, Dennis Schäfer B. Eng, Motec/Ametek, Hadamar, Germany

The Roadmap on Autonomy in Ag
Dr. Ryan Abel, Principal Software Architect, CNH, Sioux Falls SD, USA, Dr. Alexander Grever, Maschinenfabrik Bernard Krone GmbH & Co. KG, Spelle, Germany

Design of Agricultural Machinery, Simulation Techniques (Room 1A)

Moderation: **Dr.-Ing. Jan Schattenberg,** Deputy Institute Director, Head of Workinggroup Automation and Robot Systems, Institute of Mobile Machines and Commercial Vehicles, Technische Universität Braunschweig, Germany

14:00 Coupled DEM-CFD Simulation increases Crop Yield by optimizing Seed Placement
Jan Bruns M. Sc., CAE Engineer, AMAZONEN-WERKE H. DREYER SE & Co. KG, Hasbergen, Germany, Marcus Schierle M. Eng., Altair Engineering GmbH, Hannover, Germany

14:30 Coupled CFD-DEM Simulation of Agricultural Spraying Processes
Julius Willmaring M. Sc., Research Assistant and PhD Student, Institute of Mobile Machines and Commercial Vehicles, Technische Universität Braunschweig, Germany

15:00 From a Bet to Success – How to develop & validate a high new Content Main Frame Concept first time right
Dipl.-Ing. (FH) Jens Nöring, Head of Structural Simulation, CLAAS Selbstfahrende Erntemaschinen GmbH, Harsewinkel, Germany, Dipl. Ing Martin Kaltenbrunner, Magna Powertrain, Sankt Valentin, Austria

Automation of Agricultural Processes (Room 1B)

Moderation: **Dr.-Ing. Alexander Grever,** Group leader for assistance and autonomous systems, Maschinenfabrik Bernard Krone GmbH & Co. KG, Spelle, Germany

Crop Growth Estimation in Austria with a Sequential Monte Carlo Algorithm and Open Data
DI Dr. Andreas Ettlinger, Scientist, Josephinum Research, HBLFA Francisco Josephinum Wieselburg, Austria

Path Planning for Field Robots in Sugar Beet Cultivation on Sloping Farmland – Runoff and Erosion Mitigation by Cross-Slope Cultivation and in-Field Striped Agri-Environmental Measures
Marvin Melzer M. Sc., Research Assistant, Leibniz Centre for Agricultural Landscape Research (ZALF), Müncheberg, Germany, Dr. agr. Sebastian A. Pauli, AGCO GmbH, Marktoberdorf, Germany

Decision Support Tool for Economical Evaluation of highly Automated Agricultural Machinery within a Specific Farm Environment
Prof. Thomas Herlitzius, Chair of Professorship, Chair Agricultural Systems and Technology, Dipl.-Ing. Martin Hengst, Faculty of Mechanical Engineering, Technische Universität Dresden, Germany

15:30 Break

Panel discussion: Faster, further, bigger versus smaller, lighter, diverser (Room 1A and 1B)

Moderation: **Prof. Dr.-Ing. Cornelia Weltzien,** Head of Department and Chair of Agromechatronik at TUB, Leibniz Institute for Agricultural Engineering and Bioeconomy (ATB), Potsdam, Germany

16:00 Panel discussion on different agricultural machinery approaches: Agree to disagree
John Franklin Reid, PhD, Executive Director, Research Professor, Center for Digital Agriculture, Department of Agricultural and Biological Engineering, University of Illinois Urbana-Champaign, USA-Urbana, and others

16:30 Closing Remarks
Prof. Dr.-Ing. Cornelia Weltzien, Scientific Chairman of the Conference

16:40 End of the Conference

Program Committee

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Dr.-Ing. Magnus Schmitt, VDMA e. V., Frankfurt/M., Germany
Prof. Dr.-Ing. Cornelia Weltzien, Head of Department and Chair of Agromechatronik at TUB, Leibniz Institute for Agricultural Engineering and Bioeconomy (ATB), Potsdam, Germany **(Scientific Chairman)**

Technical Chair

The European Society of Agricultural Engineering (EurAgEng) exists to promote the professions of Agricultural and Biosystems Engineering and the people who serve it. The Society is particularly active in conferences, Special Interest Groups, publications, networking, and international lobbying. **www.eurageng.net**

The Association of German Engineers (VDI) is one of the leading engineer's associations worldwide. The Max Eyth Society for Agricultural Engineering represents a technical division of the VDI. It bears the name of the founder of agricultural engineering as a distinct discipline in Germany, Max Eyth (1836-1906). **www.vdi.de/meg**

The VDI Wissensforum organizes and provides seminars and conferences dedicated not only to engineers but also to academics and practicians from widely diverse branches of the economy. Our activities are backed by the Verein Deutscher Ingenieure e. V. (VDI), a virtually inexhaustible fund of know-how constantly attracting new ideas and suggestions.

Robotics and Automation (Room 2)

Moderation: Eva Schröer-Merker M. Sc., Product Manager, Maschinenfabrik Bernard KRONE GmbH & Co. KG, Spelle, Germany

Simulation Techniques (Room 3)

Moderation: Dr.-Ing. Thomas Göres, Vice President SF Product Evaluation, CLAAS Selbstfahrende Erntemaschinen GmbH, Harsewinkel, Germany

14:00

Electromechanical Tow Bar – A Novel, Practical, Economical and Efficient Way for Transporting Agricultural Robots
Dr.-Ing. Marcel Markgraf, Group Manager Vehicle Engineering, Dr.-Ing. Holger Fichtl, Fraunhofer Institute for Transportation and Infrastructure Systems IVI, Dresden, Germany

Interactive Combine Harvester Simulator for early Customer Co-Development and Operator Training
Dipl.-Ing. Julian Hagert, Research Associate, Chair of Agricultural Systems and Technology, Technische Universität Dresden, Germany, Dr.-Ing. Hilmar Jähne, Hydrive Engineering GmbH, Freital, Germany

14:30

Robotic Modular Platform for Vineyard and Orchard Operations
Dr. Luca Ferrari PhD, Robotics and Breakthrough Technology Manager, Eng. Fabio Lisurici, CNH, Modena, Italy

An Investigation of the lateral Compression Behaviour of Wheat Straw for the Development of a DEM Simulation Model
Felix Appich M. Sc., Research Assistant, Fundamentals of Agricultural Engineering, Univerity of Hohenheim, Stuttgart, Germany

15:00

Next-Generation Agricultural Robotics: Building Scalable Autonomy Through Modular Software Architectures
Manuel Volk M. Sc., Software Developer, Maschinenfabrik Bernard KRONE GmbH & Co. KG, Spelle, Germany, Dipl.-Ing. Martin Petrov, Apex.AI GmbH, Munich, Germany, Dominik Schoofs, M. Sc., LEMKEN GmbH & Co. KG, Alpen, Germany

Simulation-Based Evaluation of Tractors with Alternative Energy Carriers in Different Agricultural Contexts
Lukas Reuter M. Sc., Research Assistant and PhD Student, Institute of Mobile Machines and Commercial Vehicles, Technische Universität Braunschweig, Germany

15:30 Break

Panel discussion: Faster, further, bigger versus smaller, lighter, diverser (Room 1A and 1B)

Moderation: Prof. Dr.-Ing. Cornelia Weltzien, Head of Department and Chair of Agromechatronik at TUB, Leibniz Institute for Agricultural Engineering and Bioeconomy (ATB), Potsdam, Germany

16:00 Panel discussion on different agricultural machinery approaches: Agree to disagree
John Franklin Reid, PhD, Executive Director, Research Professor, Center for Digital Agriculture, Department of Agricultural and Biological Engineering, University of Illinois Urbana-Champaign, USA-Urbana, and others

16:30 Closing Remarks
Prof. Dr.-Ing. Cornelia Weltzien, Scientific Chairman of the Conference

16:40 End of the Conference

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