

**Session 1 : Absolute and relative localization (4 papers)**

3	Enhanced automation performance of Total Stations for kinematic applications using the ATRplus technology Hannes Maar, Gerhard Kleemaier and Hans-Martin Zogg <i>Leica Geosystems AG - Heerbrugg - Switzerland</i>
4	Evaluation of the Control Quality for Tachymetric Controlled Vehicles Otto Lerke and Volker Schwieger <i>Institute of Engineering Geodesy, University of Stuttgart - Germany</i>
8	Comparison of filtering algorithms in vehicle positioning by using low-cost sensors Dung Pham and Volker Schwieger <i>Institute of Engineering Geodesy, University of Stuttgart - Germany</i>
9	Examination of methods for error-tolerant data association between independent relative pose graphs during Multi-Agent SLAM Julian Schmiemann, Hannes Harms, Jan Schattenberg and Ludger Frerichs <i>Technische University of Braunschweig - Germany</i>

**Robotics in Agriculture – control and guidance in unstructured environments**

Dr. Avital Bechar  
*Volcani Center - Israel*

**Session 2 : Control of automated ground vehicles (5 papers)**

5	Automated tractor/implement coupling based on a Backward-Looking 3D-Time of Flight Camera Tobias Blume, Jan Schattenberg and Ludger Frerichs <i>Technische University of Braunschweig - Germany</i>
14	A Low-Speed Flatness-Based Path Tracking Control with the Time-Scaling Concept for Different Types of Steering and Drives for the Robot Operating System Ilja Stasewitsch, Tobias Blume, Hannes Harms, Jan Schattenberg and Ludger Frerichs <i>Technische University of Braunschweig - Germany</i>
15	Modeling and Control of Mobile Manipulators for Cooperative Tasks: Application to Agricultural and Industrial Contexts Zine Elabidine Chebab, Nicolas Bouton, Jean-Christophe Fauroux, Youcef Mezour and Laurent Sabourin <i>SIGMA Clermont - Clermont-Ferrand - France</i>
21	In-Field Calibrated Odometry for Skid-Steered Mobile Robots Tomas Thalmann and Hans Neuner <i>Research Group Engineering Geodesy, Technische University of Wien - Austria</i>

**Session 3 : Representation of the environment (4 papers)**

12	Development of a portable mobile laser scanning system with special focus on the system calibration and evaluation Erik Heinz, Christian Eling, Markus Wieland, Lasse Klingbeil and Heiner Kuhlmann <i>Institute of Geodesy and Geoinformation, University of Bonn - Germany</i>
16	Using Assembled 2D LiDAR Data for Single Plant Detection David Reiser*, Manuel Vázquez Arellano*, Miguel Garrido Izard**, Hans W. Griepentrog* and Dimitris S. Paraforos* <i>*University of Hohenheim Stuttgart - Germany ; **Technical University of Madrid - Espagne</i>
22	Weed control in short rotation coppices with a GPS-assisted field robot Lennart Tröskén, Ralf Pecenka and Cornelia Weltzien <i>Leibniz Institute for Agricultural Engineering, Potsdam-Bornim - Germany</i>
24	Synchronization aspects of sensor and data fusion in a research multi-sensor-system Jens-André Paffenholz, Johannes Bureick, Dmitri Diener and Johannes Link <i>Geodetic Institute, Universität Hannover - Germany</i>

**Session 4 : Field inspection devices (4 papers)**

11	A Communication Layer for UAV/UGV Swarm Applications Hannes Harms, Jan Schattenberg, Julian Schmiemann and Ludger Frerichs <i>Technische University of Braunschweig - Germany</i>
25	A medium size field inspection vehicle Angela Ribeiro, José M. Bengochea-Guevara, Dionisio Andújar and Jesus Conesa-Muñoz <i>CSIC-CAR Spanish National Research Council - Center for Automation and Robotics, Madrid - Spain</i>
26	Control and guidance system for scouting and maintenance operations on pastures Benjamin Seiferth* and Christophe Cariou** <i>*Bavarian State Research Center for Agriculture, München - Germany ; **Istrea, Research Unit TSCF, Clermont-Ferrand - France</i>
31	TRACKBOB, an accurate, robust and low cost system for mobile robot following people Jean Laneurit*, Roland Chapuis** and Christophe Debain* <i>*Istrea, Research Unit TSCF, Clermont-Ferrand ; **Pascal Institute, Clermont-Ferrand - France</i>

**Planning for mobile field robots: current advances and future perspectives**

Prof. Dionysis Bochtis  
*Aarhus University - Denmark*

**Session 5 : Innovative equipments (5 papers)**

32	ELEXC Project Ahcene Nedjimi <i>Volvo Construction Equipment Lyon - France</i>
10	Electro-mechanic Control System for Pneumatic Precision Corn Planters Habib Kocabiyik, Anil Cay, Bilal Karaastan, Sahin May and Myagmarsuren Khurelbaatar <i>Canakkale Onsekiz Mart University - Turkey</i>
28	A high yield automatic tree planting machine Istiven Appavoo*, Anicet Marionneau*, Michel Berducat* and Benoit Merckx** <i>*Istrea, Research Unit TSCF, Clermont-Ferrand ; **SATT Grand Centre, Clermont-Ferrand - France</i>
29	Hose Laying for Umbilical Slurry Spreaders: Modelling and Control Clément Auclair, Marc Favier, Thomas Fischer, Mark Hruszczak, Vyndell Michael and Yongzhi Su <i>Technische University of Kaiserslautern - Germany</i>
30	Impact of centrifugal spreaders tilt and side-tilt angles on fertilizer spreading: potential use as control variables El Mehdi Abbou-Ou-Cherif*, Emmanuel Piron*, Alaa Chateaneuf**, Denis Milet*, Roland Lenain* and Jonas Koko*** <i>*Istrea, Research Unit TSCF, Clermont-Ferrand ; **Pascal Institut, Clermont-Ferrand ; ***LIMOS Clermont University - France</i>
40	LAFORGE GUIDED HITCH - Active Implement Guidance Hubert Defrancoq* and Alex Kubik** <i>*Laforge SAS, Guignicourt - France ; **Laforge LLC, Cedar Falls - USA</i>

**Session 6 : Dynamic modeling and simulation (5 papers)**

13	Experimental evidence of pitch control of an all-terrain AGV during a ballistic phase Philippe Vasin*, Sorin Petrilă**, Marc Davis*, Liang Ju** and Jean-Christophe Fauroux** <i>*LIMOS Clermont University ; **Pascal Institut, French Institute for Advanced Mechanics (IFMA) - Clermont-Ferrand - France</i>
17	Reducing the implementation uncertainty using an advanced robotic simulator Gabriel Burtin*, Florent Malartre* and Roland Chapuis** <i>*4D-Virtualiz ; **Pascal Institut - Clermont-Ferrand - France</i>
18	Payload Estimation in Front-End Loaders I Yung*, Carlos Vazquez** and Leonid Freidovich* <i>*Umea University ; **Alö AB - Sweden</i>
20	The usage of semi-active cabin and axle suspension systems with different objectives to improve driving comfort and safety Jan Krüger, Maximilian Sieting and Henning Meyer <i>Technische University of Berlin - Germany</i>
23	Tractor-Implement Real Time Interactive 3D Simulation Based on OpenFrameworks and OpenGL Benjamin Fernandez*, José Antonio Cerrada* and Joseph Gross** <i>*UNED Madrid - Spain ; **Technische University of Hamburg - Germany</i>

**Special Session : Security and Shared Autonomy (8 papers)**

19	Situation Awareness for Intelligent Mobility in Dynamic Environments : IRT Nanoelec Perfect Platform Julia Chartre, Lukas Rummelhard, Amaury Negre, Jean-Alix David, Jerome Lussereau and Christian Laugier <i>Inria Grenoble - France</i>
27	Real Time Control Stability Algorithm for reducing Off-road Vehicles Rollover Propensity Dieumet Denis*, Benoit Thuillot**, Roland Lenain*, Mathieu Richier*** and Nicolas Bouton** <i>*Istrea, Research Unit TSCF, Clermont-Ferrand ; **Pascal Institute, Clermont-Ferrand ; ***University of Toulon - France</i>
35	Master-slave system design for tractor field-testing Audrey Guillet <i>AGCO, Beauvais - France</i>
37	Human-robot collaboration to perform aircraft inspection in working environment Frédéric Donadio, Jérémy Frejville, Stanislas Lamier and Stéphane Vetault <i>AKKA Research, Toulouse - France</i>
38	Mobile Robot Behavior Adaptation in Navigation Space Shared with Human Adrien Debord*, Eric Lucet* and Faiz Ben Amar** <i>*CEA, LIST, Interactive Robotics Laboratory, Gif-sur-Yvette ; **Université Pierre et Marie Curie Institut des Systèmes Intelligents et de Robotique, Paris - France</i>