

AGRI-SENSING 2011: International Symposium on Sensing in Agriculture in Memory of Dahlia Greidinger



Sunday 20th February, 2011

1800 – 2000 Welcome reception at the Nof Hotel for foreign invitees and attendants, the Greidinger Family & the organizing team

Monday, 21st February, 2011

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| 0800-0930 | Registration |
| 0930-1000 | Opening Ceremony <u>Chair: Maxim Shoshany</u> Minister of Science Prof. Daniel Hershkowitz, Technion President Prof. Peretz Lavie, Dean of the CEE Faculty Prof. Arnon Bentur, Greidinger Family representatives, and Avi Shaviv |
| | 1st Plenary Session <u>Session Chair: Avi Shaviv</u> |
| 1000-1040 | Raj Khosla <i>Precision Nutrient Management: Challenges and Opportunities in a Flat World</i> |
| 1040-1120 | Mel Tyree <i>An Outsider's View Of Water-Stress-Sensing in Fruit Trees for Irrigation Management</i> |
| 1120-1200 | Marshall Porterfield <i>Development of Nanomaterial Platforms and Lab-On-A-Chip Technologies for Agricultural Sensing Applications</i> |
| 1200-1330 | Lunch & Posters |
| | 2nd Plenary Session <u>Session Chair: Yafit Cohen</u> |
| 1330-1410 | David Mulla <i>Twenty-Five Years of Remote Sensing in Precision Agriculture: Key Advances and Remaining Knowledge Gaps</i> |
| 1410-1450 | Urs Schmidhalter <i>Developments in Precision Agriculture - Sensing the Nitrogen Status in Plants and Implementation into Fertilizing Algorithm</i> |
| 1450-1530 | Shmuel Friedman <i>Overview of Electromagnetic Methods for Evaluation of Soil Water Content and Salinity</i> |
| 1530-1600 | Coffee Break |

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| | Auditorium | | Room 407 |
|-----------|--|-----------|--|
| | Sensing & Control Systems <u>Chair: Raphael Linker</u> | | Fertilizers & Fertility <u>Chair: Urs Schmidhalter</u> |
| 1600-1630 | John Lea-Cox <i>Measuring Spatial and Temporal Dynamics of Water in Soil and Soilless Substrates, to Enable Precise Scheduling of Irrigation Applications</i> | 1600-1630 | Yuxin Miao <i>Sensing Technology-Based Precision Nitrogen Management</i> |
| 1630-1650 | Josef Tanny <i>Application of the Surface Renewal Technique for Estimating Evapotranspiration from an Industrial Tomato Crop</i> | 1630-1700 | Viacheslav Adamchuck <i>On-the-go Proximal Soil Sensing for Agriculture</i> |
| 1650-1710 | Shimon Rachmilevitch <i>Physiological Parameters of Plants as Indicators of Water Quality in a Constructed Wetland</i> | 1700-1730 | Martin Strenner <i>The Effect of Wavelength and Mathematical Formula on the Result of Measurement with Different Vegetation Indices</i> |
| 1710-1730 | Vinay Pagay <i>A Novel MEMS-based Microfluidic Water Potential Sensor for Monitoring of Water Stress in Woody Plants and Soils</i> | 1730-1750 | Shaul Cohen <i>Fertilization Decision-making Using Geometric Segmentation of Multispectral Image</i> |
| 1730-1750 | Meir Teitel <i>The Greenhouse as an Open Chamber System</i> | | |

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Tuesday, 22nd February, 2011

| | Auditorium | | Room 407 |
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| | Soil & Water Conservation <u>Chair: Alex Furman</u> | | Orchards <u>Chair: Eran Raveh</u> |
| 0900-0920 | André Revil <i>Monitoring of Pore Water Flow Using Low-frequency Electrical Methods</i> | 0900-0930 | Elias Fereres <i>Detecting Irrigation Needs to Improve Water Management in Commercial Orchards</i> |
| 0920-0940 | Giorgio Cassiani <i>Static and Dynamic Aspects of Non-invasive Monitoring of Soil Characteristics and Conditions</i> | 0930-1000 | Ulrich Zimmermann <i>A Non-invasive, User-friendly, Plant-based Pressure Probe for Online Monitoring of Water Stress of Crop and Fruit Trees Under Field Conditions</i> |
| 0940-1000 | Effi Trippler <i>New Plant-based Feedback Irrigation Techniques for Increasing WUE of Crops</i> | 1000-1020 | Arie Nadler <i>Stem EC Probe: An Innovative Irrigation Controller which Activates Valves in Agronomic Crops Based on Direct Evaluation of the Plants Water Status</i> |
| 1000-1020 | Matteo Camporese <i>Spatial Variability of CO2 Emissions in a Drained, Farmed Peatland of the Venice Watershed, Italy</i> | 1020-1040 | Shabtai Cohen <i>Comparing Dendrometers, Sap Flow and Soil Water Sensors in a 3-year Persimmon Irrigation Trial</i> |
| 1020-1040 | Naftaly Goldshleger <i>Soil Degradation Monitoring by Active and Passive Remote-sensing</i> | | |
| 1040-1100 | Coffee Break | | |
| | 3rd Plenary Session <u>Chair: Maxim Shoshany</u> | | |
| 1100-1140 | Prasad Thenkabail <i>Advances in Hyperspectral Remote Sensing of Vegetation and Agricultural Crops</i> | | |
| 1140-1220 | Stuart Marsh <i>Remote Sensing of Rangelands – Matching Capabilities with the Need for Information in a Changing World</i> | | |
| 1220-1300 | Ehud Behar <i>Israel's Vision of Satellite Remote Sensing Systems</i> | | |
| 1300-1400 | Lunch Break | | |

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| | Fertilizers & Fertility <u>Chair: Uri Yermiyahu</u> | | Rangelands: Grazing Behavior and Rangeland Productivity <u>Chair: Stuart Marsh</u> |
| 1400-1430 | Urs Shmidhalter <i>Fertilizers and Fertility - What else should we sense?</i> | 1400-1420 | Arnon Karnieli <i>Assessing & Mapping Grazing Gradients around Watering Points in Central Asian Deserts Using Satellite Image Processing and Geostatistical Methods</i> |
| 1430-1500 | George Vellidis <i>Using Optical Sensors to Schedule Variable Rate Application of Agrochemicals on Cotton</i> | 1420-1440 | Zalmen Henkin <i>GPS Use for Studying Cattle Distribution in Mediterranean Rangelands</i> |
| 1500-1530 | Avi Shaviv <i>In-Situ Tracing of N Transformation in Soil and Gas Phases Using Isotopes and IR Spectroscopy</i> | 1440-1500 | Robin Dobos <i>Correlating GPS Movement Metrics with Animal Behaviour</i> |
| | | 1500-1520 | Eugene Ungar <i>How Well Can We Infer the Activity Timeline of Animals on Rangeland?</i> |
| | | 1520-1540 | Tal Svoray <i>Space-Time Dynamics in PP of Annuals: Modeling with Geoinformatics</i> |
| 1540-1600 | Coffee Break | | |
| | Field Crops <u>Chair: Raj Khosla</u> | | Rangelands: Vegetation Dynamics <u>Chair: Tal Svoray</u> |
| 1600-1630 | James Lowenberg-Deboer <i>Economics of Remote and Direct Sensing in Agriculture</i> | 1600-1620 | Moshe Shahack <i>The Role of Plants as Ecosystem Engineers in Resilience to Climate Change</i> |
| 1630-1700 | Dan Long <i>On-Combine Sensing of Grain and Straw Yield within Wheat Fields</i> | 1620-1640 | Liat Hadar <i>Monitoring Effects of Controlled Goat Grazing on the Landscape: Different Approaches and Dilemmas</i> |
| 1700-1720 | Ofer Beeri <i>Utilizing Daily Satellite Imagery for Farming-Oriented Information</i> | 1640-1700 | Yohay Carmel <i>LIDAR & Air Photography for Fine Scale Studies of Vegetation Dynamics</i> |
| 1720-1740 | Moshe Meron <i>Crop Water Stress Mapping for Site-Specific Irrigation by Thermal Imagery and Artificial Reference Surfaces</i> | 1700-1720 | Maxim Shoshany <i>Shrublands' Biomass Across Climatic Gradients: Modeling and Implementation Using Remote Sensing Data</i> |
| 1740-1800 | Yafit Cohen <i>Fusion of Hyperspectral & Thermal Images For Estimating Nitrogen and Water Status in Potato Fields for Variable Rate Application</i> | 1720-1740 | Stefan Leu <i>Evaluating the effects of different soil management on productivity in arid zones using MODIS data</i> |
| | Buses to the Nof Hotel and train station leave at 1810 | 1800-1900 | Discussion: The Use of Remote and Direct Sensing in Range Science <u>Chair: Avi Perevolotsky</u> |
| 19:45 | Reception at the Greidinger Family Residence - foreign attendants, theme heads, and organizers | | |

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Wednesday, 23rd February, 2011

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| | Sensing & Control Systems <u>Chair: John Lea-Cox</u> | | Soil & Water Conservation <u>Chair: Arnon Karnieli</u> |
| 0900-0920 | Yaron Paz <i>Blind Separation of Infra – Red Signatures of Plants</i> | 0900-0920 | Jiftach Ben-Asher <i>Monitoring Actual Evapotranspiration with Infra- red Radiometers as Input in Soil Water Transport Model for Optimal Irrigation</i> |
| 0920-0940 | Leonid Vulfson <i>Remote Sensing in Microwave and Gamma Ranges for the Monitoring of the Soil Water Content of the Root-Zone</i> | 0920-0940 | Eli Argaman <i>Quantitative Assessment of Land Surface Processes Utilizing the Advection-Aridity Model</i> |
| 0940-1000 | Marina Hetz <i>Semi-Arid Vegetation Parameters from Synthetic Aperture Radar Data</i> | 0940-1000 | Shai Sela <i>Hydrological Fluxes of a Semi-Arid Sealed System and Their Relation to Vegetation Patterns</i> |
| 1000-1020 | Raphael Linker <i>Overview of Mid-infrared Techniques and Chemometrics for Soil Analysis</i> | 1000-1020 | Eran Segal <i>Microsensing of Water Dynamics and Root Distributions in Sandy Soils by Magnetic Resonance Imaging and Pliable TipTensiometers</i> |
| 1020-1040 | Avital Bechar <i>A Computer Vision Algorithm for Navigation of an Autonomous Sprayer in Pepper Greenhouses</i> | 1020-1040 | Arthur Genis <i>Retrieval of Surface Roughness Parameters of Bare Soil from the ERS-2 SAR Data</i> |
| 1040-1100 | Coffee Break | | |
| | Precision Agriculture <u>Chair: Prasad Thenkabail</u> | | |
| 1100-1130 | Anatoly Gitelson <i>Remote Estimation of Crop Biophysical Characteristics: from Close Range to Satellites</i> | | |
| 1130-1200 | Annamaria Castrignanó <i>Integrating Proximal Sensing and Geostatistics to Delineate Management Zones</i> | | |
| 1200-1230 | George Vellidis <i>Wireless Sensor Network Applications in Agriculture</i> | | |
| 1230-1300 | Holger Lilienthal <i>Estimating Crop Parameters and LAI Through Inversion of Hyperspectral Canopy Reflectance Data</i> | | |
| 1300-1430 | Lunch Break & Poster Session | | |

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| | Field Crops <u>Chair: David Bonfil</u> | | Orchards <u>Chair: Elias Fereres</u> |
| 1430-1500 | Dan Long <i>Combined Spectral Indices for Remote Sensing of Leaf Chlorophyll Content of Dryland Wheat and Direct Sensing in Agriculture</i> | 1430-1450 | Stavros Vougioukas <i>Sensing and Intelligent Automation for Orchard Management</i> |
| 1500-1520 | Thomas Jarmer <i>Spectroscopy and Hyperspectral Imagery for Monitoring of Summer Barley</i> | 1450-1510 | Alon Ben Gal <i>Whole-Tree Water Balance and Indicators for Short-Term Drought Stress in Non-Bearing 'Barnea' Olives</i> |
| 1520-1540 | Ronit Rud <i>Spatial-Spectral Analysis for Detection Of Salinity Effects In Cauliflower, Eggplant and Kohlrabi</i> | 1510-1530 | Nurit Agam <i>Diurnal Dynamics of Crop Water Stress Index of Olive Trees - What Does It Really Tell Us?</i> |
| 1540-1600 | Ittai Herrmann <i>High Spatial Resolution Ground-Level Hyperspectral Imaging for Weed Detection</i> | 1530-1550 | Amos Naor <i>The Interaction between the Number of Fruit Per Tree and Water Relations in Apples – Implications for Irrigation Scheduling</i> |
| 1600-1620 | Timea Ignat <i>Chlorophyll Content Measurement in Bell Pepper by VIS-NIR Spectrometry</i> | 1550-1610 | Eran Raveh <i>The Use of the "Envelope Curve" Model for Determining the Optimal Leaf Mineral Concentration in Citrus Orchards</i> |
| 1630-1700 | Coffee Break | 1610-1650 | Coffee & Discussion Lead by Amos Naor |
| 1700-1830 | Closing Ceremony: Best Poster Award and Closing Discussion with David Mulla, Raj Khosla, Mel Tyree, Prasad Thenkabail <u>Chair: Victor Alchanatis</u> | | |

Thursday 24th February, 2011: Professional and Touristic Tour: 0800-1730 (leaving from the Nof Hotel)