

**Sunday: July 23, 2006**

**Remote Sensing (2:30 – 4:30) Siva Balasundram Session Chair**

- Klem – Prediction of Nutritional State, Yield Parameters and Disease Severity in Cereals Using Chlorophyll Fluorescence and Spectral Reflectance Parameters and Neural Networks
- Hank – Potential of the Tractor Mounted Hyperspectral System GVIS for the Monitoring of Winter Wheat - A Field Study in 2004
- Kulkarni – Identifying Soil Compaction in Cotton Using Vegetation Indices
- Thorpe – Estimation of Corn Plant Population from Hyperspectral Remote Sensing Imagery Using Regression on Principle Components

**Engineering Technology (2:30 – 4:30) Jim Schepers Session Chair**

- Christy – Precision Agriculture Applications of an On-The-Go Soil Reflectance Sensor
- Holland – Configurable Multi-Spectral Active Sensor for High-Speed Plant Canopy Assessment

**Precision Management/ Conservation (2:30 – 4:30) Greg Larson  
Session Chair**

- Taylor – Determining Optimum Management Zone-Based Seeding Rates Using On-Farm Experimentation and Variable Rate Seeding Technologies
- Gee – A Cascade Hough Transform for a Crop Row Detection From Aerial and In-Field Agronomic Images
- Temple – Spatially Variable Insecticide (SVI) Prescriptions Using Cotton Yield and Profit Maps
- Burris – GIS and GPS Procedures to Help Improve Cotton Management

**Modeling (2:30 – 4:00) Yuxin Miao Session Chair**

- DeJonge – Irrigation Simulation of Central Iowa Cornfield Using CERES-Maize Crop Model
- Wang – Optimal Site-Specific Nutrient Management and the Law of the Minimum
- Sahoo – Simulating the Effects of Agro-Management Practices on Water and Nitrogen Use Efficiencies of Rice Wheat System in Haplustalf by Using RZWQM

**Monday: July 24, 2006**

**Natural Resources Variability (10:00 – 12:00) Jose Molin Session Chair**

- Bolenius – On-the-Go Measurements of Soil Penetration Resistance on a Swedish Eutric Cambisol
- Sudduth – Relating Spatial Variations in Soil Compaction to Soil Physical Properties and Crop Yield
- Roel – Why Do Some Farmers Get Higher Yields? Multivariate Analysis of a Group of Uruguayan Rice Farmers

**Information Management (10:00 – 12:00) Jose Hernandez Session Chair**

- Reese – Lessons Learned From Implementing Management Zones and Participatory Research in Production Fields
- Larson – A Framework for Evaluating Investment in Precision Pest Control in Cotton Production
- Gnip – Prefarm Mapserver as a Tool for Variable Rate Recommendation in Precision Farming System

**Precision Management/ Conservation (10:00 – 12:00) Eugene Burris Session Chair**

- Lamp – Adopting Precision Farming Techniques on a Cashcrop Farm in Northern Germany
- Morimoto – Feasibility Study of PA Technology in Ishikawa Rice Production
- Lilienthal – Influence of Variable N-Fertilization on the N-Efficiency
- Wolcott – Evaluation of Site-Specific Nematode Management Strategies for Cotton Production in the Mississippi River Alluvial Soil Area of Louisiana

**Remote Sensing (10:00 – 12:00) Walter Bausch Session Chair**

- Jasper – N-Sensor ALS – Active Sensing of Crop N Status Using Optimized Wavelength Combination
- Chang – Evaluating Atmospheric Correction of Landsat ETM+ Imagery Using Ground-Based Reflectance Information
- Scharf – Aerial Photos Can Predict Corn Yield Loss Due to N Deficiency

**Engineering Technology (10:00 – 12:00) Konstantinos Ferentinos Session Chair**

- Schumann – Real-Time Sensing of Tree Crops for Precision Fertilization
- Chosa – Wireless Sensing for Yield Monitoring of Production Regions
- Kroulik – Soil Tillage as Soil Heterogeneity Indicator
- Samson – A Design of a Low-Cost, Site Specific Sprayer for Small Farm Operations

### Natural Resources Variability (1:00 – 2:00) Ken Sudduth Session Chair

- Lund – On -the-Go Mapping of Soil pH and Other Properties Using Solution-Based Electrochemical Measurements
- Anandacoomaraswamy – Influence of Topography on the Yield of Tea

### Information Management (2:00 – 3:00) Ken Sudduth Session Chair

- Ferentinos – Energy-Saving Design Adaptation of Wireless Sensor Networks with Solar Rechargeable Batteries
- Rebeiro – JSTF: A J2EE-based Spatio-Temporal Framework For Precision Agriculture Information Systems

### Precision Management/ Conservation (1:00- 3:00) Keith Morris Session Chair

- Schwarz – The Precision of On-Farm Experiments When Deriving Production Functions for Precision Farming
- Flynn – Using NDVI as a Pasture Management Tool
- Palm – Within Season Corn N Management Using Reflectance Sensors
- Shannon – Alternatives to Using a Reference Strip for Reflectance-Based Nitrogen Application in Corn

### Remote Sensing (1:00 – 3:00) Sharon Clay Session Chair

- Yang – Using Hyperspectral Imagery and Spectral Unmixing Techniques for Mapping Grain Sorghum Yield Variability
- Heniniger – Using Aerial Photographs to Prescribe Growth Regulators for Cotton - USA
- Lilienthal – Maturity Mapping of Potatoes Using Superspectral Remote Sensing
- Maidl – Reflectance Measurements as a Tool to Guide Site Specific Nitrogen Fertilization in Sugar Beets (*Beta vulgaris L.*)

### Engineering Technology (2:00 – 3:00) Yuxin Miao Session Chair

- Mesterhazi –Development of Continuous Soil Moisture Measurement Method
- Gnip – Open Agriculture System

### Profitability (1:00 – 2:00) Michel Nolin Session Chair

- Hurley – Temporal and Spatial Variability of Corn Response to Nitrogen and Phosphorus: What is the Potential for Management

- English – Comparison of Precision Farming Technology Adoption Between 2000 and 2004: An Analysis of Cotton Producers in the South

### Crop Quality (2:00 – 3:00) Michel Nolin Session Chair

- Reckleben – Determination of Quality Parameters in the Field - Approaches, Solutions and Experience
- Grove – Spatial Structure of Corn Grain Composition and the Potential for In-Field Grain Quality Segregation

## **Tuesday: July 25, 2006**

### Remote Sensing (8:00 – 9:30) Chenghai Yang Session Chair

- Tubana – Corn Yield Potential Prediction Based on In-Season Spectral Measurements
- Meron – Aerial Photography and Ground Based Equipment to Evaluate Crop Cover for Tree Specific Irrigation Scheduling
- Panbecker/Keiser – Use of Aerial Imagery to Enhance Agronomy Decisions and Recommendations

### Profitability (8:00 – 9:30) Terry Griffin Session Chair

- Layrol – Nitrogen Management Services in England for Wheat Farmers
- Gandonou – Evaluating the Economic Impact of Field Area Measurements
- Shockley – A Logit Analysis of Precision Agriculture Adoption in Kentucky

### Precision Management/ Conservation (8:00 – 9:00) David Franzen Session Chair

- Clay – The Influence of Elevation Zone on Carbon Storage and Budgets
- Pullis – Assessing Corn Yield Losses Across Landscape Using C-13 Discrimination

### New Applications Worldwide (9:00 – 9:30) David Franzen Session Chair

- Aggeloupoulo – Precision Farming in Small Apple Fields of Greece

### Spatial Statistics (8:30 -9:30) Gregg Carlson Session Chair

- Lowenberg-DeBoer – Local Spatial Autocorrelation in Precision Agriculture Settings Accounting for Micro-Scale Topography Differences
- Mulla – Using On-Farm Experiments and Spatial Statistics to Identify Management Zones

**Remote Sensing (10:00 – 11:00) Brenda Tubana Session Chair**

- Phillips – Defining Useful Limits for Spectral Reflectance Measurements in Corn
- Gumz – Differentiation of Mint and Weeds Using Spectral Vegetation Indices

**New Applications Worldwide (10:00 – 11:00) Yuxin Miao Session Chair**

- Kumar – Effect of Seeding Depths on Yield Performance of Wheat Varieties under Rainfed Conditions
- Srivastva – Agro-ecosystem Specific Alternate Mountain Farming Systems in NW Himalaya

**Profitability (10:00 – 11:00) Jess Lowenberg-DeBoer Session Chair**

- Menegatti – Economical and Agronomical Benefits of Precision Farming Adoption in Sugar Mills from Brazil
- Gandorfer – Whole Farm Impact of Precision Farming Technologies

**Precision Management/ Conservation (10:00 – 11:00) Dan Humburg Session Chair**

- Pierce – Remote, Real-Time Irrigation Monitoring and Control in Permanent Crops
- Chavez – Modeling Cart Movement to Minimize Precision Irrigation Errors for Linear Move Systems

**Modeling (10:00 – 11:00) Jans Bobert Session Chair**

- Silverio – Greenhouse Analytical Modeling with Spatial Variability Identification
- Bari – Use of Ecotope Mapping and Modeling in Assessing the Effect of Changing River Flow Regimes on Agricultural Productivity

**Geostatistics/Sampling (1:30 – 2:30) Nan Hong Session Chair**

- Knappenberger – The Dynamic Variation of Seeding Depth of Corn
- Abd-Aziz – Multiple GPS Measurements for a Digital Elevation Model

**Remote Sensing (1:30 – 2:30) Harlan Palm Session Chair**

- Humburg – Correlation of Sugarbeet Quality to Canopy and Field Variables Using Landsat Data and A Large GIS Database
- Coquil – Farmstar: An Operational Crop Management Information System Using Satellite Imagery

**Profitability (1:30 – 2:30) Terry Hurley Session Chair**

- Griffin – Improving Farm Management Decision Making: Experiences From Spatial Analysis of Yield Monitor Data From Field-Scale-On-Farm Trials
- Conrad – Variable Rate Fertilization Profitability on High-Oil Corn Production

**Precision Management/ Conservation (1:30 – 2:30) Nicolas Tremblay Session Chair**

- Clay – Weed Emergence by Landscape Position
- Huggins – Field-Scale Variation of Nitrogen Use Efficiency and Classification of N Indices for Evaluating Wheat performance

**Modeling (1:30 – 2:30) Kendall DeJonge Session Chair**

- Bobert – Fuzzy-Expert System for the Generation of Yield-Expectation Maps
- Hache - A New Methodology to Predicting Soil Organic Matter Using Data From the Real-Time Soil Spectrophotometer

**Geostatistics/Sampling (3:00 – 4:00) Tom Mueller Session Chair**

- Tremblay – A Comparative Study of Wheat and Corn NDVI and Nitrogen Saturation Index as Affected by Soil Electrical Conductivity, Elevation and Measurement Date
- Amin – Zoning of Paddy Fields for Fertilizer Management

**Remote Sensing (3:00 – 4:30) Mary Gumz Session Chair**

- Gee – Internal Leaf Structure and Spectral Reflectance of Weed Plants
- Li – A Web-Based Spectral Database for Precision Agriculture and Its Applications in China
- Iqbal – Remote Sensing of Surface Carbon and Water Contents Using Bare Soil Imagery

**Profitability (3:00 – 4:30) Ron Heiniger Session Chair**

- Froehlich – Development of InSite VRN as an Effective Nutrient Management Tool
- Khosla – Site-Specific Management Zones: Seven Years of Research in the Western Great Plains
- Schmitz – Site Specific Manure Management to Maximize Profitability Within Regulatory Constraints

**Precision Management/ Conservation (3:00 – 4:30) Amy Kaleita Session Chair**

- Roloff – Mining Regional Spatial Field Data for Cause-And-Effect Relations Involving Soybean Yield
- Wagner – The Use of Artificial Neuronal Networks to Generate Decision Rules for Site-Specific Nitrogen Fertilization

### Modeling (3:00 – 4:00) Anton Thomsen Session Chair

- Lilienthal – Suitability of Spectral Signatures for the Localization of Site Specific Sulphur Deficiency in Oilseed Rape by Remote Sensing
- Lilienthal – Mapping Crop Rotation Based on Multi-Temporal Satellite Data and Spectral Libraries

## **Wednesday: July 26, 2006**

### Remote Sensing (8:00-9:30) Holger Lilienthal Session Chair

- Thomsen – Nitrogen Fertilization based on Combined Measurements of Canopy Spectral Reflectance and Structure
- Belal – Using Crop Growth Models and Remote Sensing to Delineate Management Zones on Small Cotton Farms in Egypt
- Miao – Evaluating Aerial Hyperspectral Remote Sensing for Early Season N Deficiency Detection in Corn

### Precision Management/ Conservation (8:30-9:30) Arnold Schumann Session Chair

- Molin – Variable Rate Fertilizer on Coffee
- Wesch – Using High Resolution Soil Information for Orchard and Vineyard Establishment

### Education/Outreach (8:30-9:30) Cheryl Reese Session Chair

- Reichardt – Results of a Multitemporal Survey on the Adoption of Precision Farming in Germany
- Reichardt – Precision Farming Education in Germany - Obstacles and Solutions

### Environment (8:30-9:00) James Taylor Session Chair

- Jantschke – Advanced Irrigation Control by Means of Sensor Fusion