Workshop Program

Sunday, May 15, 2011 – Workshop registration and welcome reception

Best Western Ville-Marie Hotel and Suites

16:00 – 21:00	Workshop registration	
18:00 – 21:00	Welcome reception	

Monday, May 16, 2011 – First day of the workshop

McGill University, Downtown Campus, 232 Leacock Building

Workshop opening		
08:00 – 09:00	Late registration and placement of posters	
09:00 – 09:15	V. Adamchuk	Opening remarks from the conference chair
09-15 – 09-30	R. Viscarra Rossel	Opening remarks from the workgroup chair
09:30 – 10:00	S. Prasher	Welcome to McGill University
10:00 – 10:30	Coffee break and poster displays	
Session 1	Soil electrical conductivity/resistivity sensing	
Chair: A. McBratney		
10:30 – 10:50	K. Sudduth	An incomplete history of proximal soil sensing
10:50 – 11:05	E. Lueck	Resistivity mapping with Geophilus electricus – information about lateral and vertical soil heterogeneity
11:05 – 11:20	C. Hedley	Soil water status and water table modelling using EM surveys for precision irrigation scheduling
11:20 – 11:35	J. Molin	The influence of soil moisture on the spatial and temporal variability of soil electrical conductivity
11:35 – 11:50	D. Altdorff	Observation of soil moisture dynamic at a landslide affected Alpine hillside using electromagnetic induction (EMI) and Kmeans clustering
11:50 – 12:05	V. Patil	Effects of quality of water and irrigation regimes on temporal changes in soil EC and yield of greenhouse-grown bell pepper (Capsicum annuum L.)
12:05 – 12:30	Discussion	
12:30 – 13:30	Lunch	
Session 2	Advanced geophysical methods in soil science	
Chair: R. Khosla		
13:30 – 14:00	B. Allred	Agricultural geophysics: past/present accomplishments and future advancements
14:00 – 14:15	K. Sudduth	Mapping conductivity-depth relationships by combining proximal and penetrating ECa sensors
14:15 – 14:30	G. Coulouma	Comparisons of diachronic ERT and Spectral Analysis of Surface Waves for estimating bedrock depth
14:30 – 14:45	P. DeSmedt	Continuous multi-signal EMI survey in geoarchaeological research: a 90 ha dataset
14:45 – 15:00	M. Mahmoudzadeh	Clay content and soil moisture mapping using on-ground time-domain GPR
15:00 – 15:30	Discussion	
15:30 – 16:00	Coffee break and poster displays	

Session 3	Integrated sensing strategies	
Chair: R. Ferguson		
16:00 – 16:15	R. Gebbers	Evaluation of soil sensor fusion for mapping macronutrients and soil pH
16:15 – 16:30	M. VanMeirvenne	Key properties for delineating soil management zones
16:30 – 16:45	K. Piikki	Sensor data fusion for topsoil clay mapping of an agricultural field
16:45 – 17:00	M. Kroulik	Proximal soil sensing in the framework of iSOIL project
17:00 – 17:15	F. Veronesi	3D soil compaction mapping with a three-coefficient polynomial
17:15 – 17:30	R. Khosla	Early detection of nitrogen deficiency in corn using fluorescence
17:30 – 18:00	Discussion	
18:00 – 21:00	Dinned in small groups at local establishments (on your own)	

Tuesday, May 17, 2011 – Second day of the workshop
McGill University, Downtown Campus, 232 Leacock Building

Session 4	In situ soil spectroscopy	
Chair: K. Sudduth		
08:30 – 09:00	R. Viscarra Rossel	Proximal soil spectroscopy
09:00 – 09:15	E. Lund	Proximal sensing of soil organic matter using the Veris® OpticMapper™
09:15 – 09:30	A. Mouazen	On-the-go measurement of key soil properties in European farms
09:30 – 09:45	L. Brodsky	Utilization of VNIR diffuse reflectance spectroscopy to map soil erosion study on two arable fields
09:45 – 10:00	M. Kodaira	Dozen-soil-parameter mapping using a real-time soil spectrophotometer
10:00 – 10:15	Y. Nagami	Soil P_2O_5 calibration and mapping using Real-Time Soil Sensor (RTSS)
10:15 – 10:30	Discussion	
10:30 – 11:00	Coffee break and poster displays	
Session 5	Spectroscopic data analysis	
Chair: A. Mouazen		
11:00 – 11:10	F. Deng	Development of near infrared spectral library of Danish soils
11:10 – 11:20	K. Kusnierek	Pre-processing of soil visible and near infrared spectra taken in laboratory and field conditions to improve the within-field soil organic carbon multivariate calibration
11:20 – 11:30	M. Nocita	Improving spectral techniques to determine soil organic carbon by accounting for soil moisture effects
11:30 – 11:40	A. McBratney	Removing the effect of soil moisture from NIR diffuse reflectance spectra for prediction of soil carbon
11:40 – 11:50	C. Morgan	Using soil spectral libraries in support of proximal soil sensing

11:50 – 12:00	H. Bartholomeus	Improved spectral estimation of multiple soil properties by stratification on ancillary and spectral data
12:00 – 12:30	Discussion	
12:30 – 13:30	Lunch	
Session 6 Chair: B. Allred	Radiometric methods in soil science	
13:30 – 13:45	C. Waring	What can you measure with neutron activation analysis?
13:45 – 14:00	E. Loonstra	Gamma and Electro Magnetics: a multi-sensor approach for the mapping of water related soil properties
14:00 – 14:15	C. Dierke	Towards a better understanding of γ-ray for soil mapping – analysis of γ-ray measurements at field sites across Europe
14:15 – 14:30	S. Mahmood	Estimating soil properties with a proximal gamma-ray spectrometer using windows and full-spectrum analysis methods
14:30 – 14:45	T. Mulder	Soil mapping at regional scale using ASTER and VNIR spectroscopy
14:45 – 15:00	L. Ramirez-Lopez	New approaches of soil similarity analysis using manifold-based metric learning from proximal vis–NIR sensing data
15:00 – 15:30	Discussion	
15:30 – 16:00	Coffee break and poster displays	
Session 7 Chair: M. Van Meirvenne	Scope of proximal soil sensing	
16:00 – 16:20	A. McBratney	Defining proximal soil sensing
16:20 – 16:35	J. Lowenberg-DeBoer	The economics of direct soil sensing in agriculture
16:35 – 16:50	S. Priori	Improving wine quality through a harvest zoning based upon the combined use of proximal and remote sensing
16:50 – 17:05	A. Castrignano	An approach for delineating homogeneous zones by using proximal and remote sensing
17:05 – 17:20	V. Adamchuk	On-the-go soil sensors – are we there yet?
17:20 – 18:00	Discussion	
19:00 – 22:00	Workshop dinner	

Wednesday, May 18, 2011 – Field day

McGill University, Macdonald Campus, McGIll Farm and 2-045 Raymond Building

09:00 – 10:00	Transportation to Macdonald campus	
10:00 – 12:00	Field demonstration	
12:00 – 13:30	Branch at Tadja Hall Faculty Club	
13:30 – 13:50	C. Begg	Overview of Quebec soils
Industry Session Chair: V. Adamchuk		
13:50 – 14:10	M. Catalano	Geonics Limited (Mississauga, Ontario, Canada)
14:10 – 14:30	E. Lund	Veris Technologies, Inc. (Salina, Kansas, USA)
14:30 – 14:50	E. Loonstra	The Soil Company (Groningen, The Netherlands)
14:50 – 15:10	R. Taylor	DUALEM, Inc. (Milton, Ontario, Canada)

15:10 – 15:30	D. Rooney	Soil and Topography Information, Inc. (Madison, Wisconsin, USA)
15:30 – 16:00	Light refreshments break	
Final Session		
Chair: R. Viscarra Rossel		
16:00 – 17:00		Workshop session reports
17:00 – 17:30		Closing remarks
17:30 – 18:30	Return to Downtown	