

30th Canadian Symposium on Remote Sensing / 30e Symposium canadien sur la télédétection

June 22-25 juin 2009
Lethbridge Alberta Canada

"Bridging Excellence / Pont vers l'excellence"

TECHNICAL PROGRAM: ORAL and POSTER SESSIONS



Technical Sessions at a Glance

SESSION	DAY	TIME	Session A Room: PE-261	Session B PE-250	Session C PE-275	Session D PE-264
ORAL-I	Tues. June 23	2:00 - 3:30 PM	AGRICULTURE	RADAR 1	METHODS 1	LIDAR 1
ORAL-II	Tues. June 23	3:50 - 5:20 PM	ATMOSPHERE	RADAR 2	HAZARDS 1	OTHER
ORAL-III	Wed. June 24	8:30 - 10:20 AM	HAZARDS 2	RADAR 3	WATER	HYPERSPPECTRAL 1
ORAL-IV	Wed. June 24	10:40AM - 12:10PM	MODELING	CRYOSPHERE	VEGETATION	LIDAR 2
ORAL-V	Wed. June 24	3:30 - 5:20 PM	FORESTRY 1	RADAR 4	METHODS 2	HYPERSPPECTRAL 2
ORAL-VI	Thurs. June 25	8:30 - 10:20 AM	GLOBAL CHANGE	ECOLOGY 1	METHODS 3	LIDAR 3
ORAL-VII	Thurs. June 25	1:30 - 3:20 PM	FORESTRY 2	ECOLOGY 2	METHODS 4	GEOLOGY
SESSION	DAY	TIME	Room			
POSTER-I	Tues. June 23	2:00 - 3:30 PM	Foyer			
POSTER-II	Tues. June 23	3:50 - 5:20 PM	Foyer			
POSTER-III	Wed. June 24	10:40AM - 12:10PM	Foyer			
POSTER-IV	Thurs. June 25	1:30 - 3:20 PM	Foyer			

30th/30^e CSRS Lethbridge

TECHNICAL PROGRAM: ORAL SESSIONS

Tuesday June 23: 2:00 – 3:30 pm. Room PE-261

Oral Session I-A: AGRICULTURE

Chair: Dr. Anne Smith

2:00 – 2:20 **Quantifying Crop Biomass Accumulation Using Multi-temporal Optical Remote Sensing Observations. (#598)**

Jiangui Liu (1), Elizabeth Pattey (1), Jiali Shang (1), Stuart Admiral (1), Guillaume Jégo (1), Heather McNairn (1), Anne Smith (1), Baoxin Hu (2), Frank Zhang (2) and Jim Frementle (2)

1 - Agriculture and Agri-Food Canada

2 - York University, Department of Earth and Space Science and Engineering

2:20 – 2:40 **Neural Network Classification of Hyperspectral Image Data for Improved Site-Specific Herbicide Management. (#601)**

P.R. Eddy (1,2), A.M. Smith (3,2), B.D. Hill (3), D.R. Peddle (2), C.A. Coburn (2), R.E. Blackshaw (3).

1 - Alberta Terrestrial Imaging Center

2 - Department of Geography, University of Lethbridge

3 - Agriculture and Agri-Food Canada

2:40 – 3:00 **Mapping native grassland change using single-date multispectral satellite imagery. (#564)**

Anne M. Smith (1), G.L. Larson (1), C. Kloppenburg (1), B. D. Hill (1), R. Carreau (1) and P.M. Teillet (2)

1 - Agriculture and Agri-Food Canada 2 - University of Lethbridge

3:00 – 3:20 **Estimation of gross ecosystem production by hyperspectral measurements in a rice field. (#595)**

Micol Rossini (1), Michele Meroni (1), Giovanni Manca (2), Lorenzo Busetto (2), Guenther Seufert (2)

1 - Remote Sensing of Environmental Dynamics Lab. University of Milano-Bicocca (UNIMIB) Italy

2 - Institute for Environment and Sustainability JRC Ispra Italy, Sergio Cogliati, UNIMIB

3:20 – 3:30 **Panel Discussion**

Tuesday June 23: 2:00 – 3:30 pm. Room PE-250

Oral Session I-B: RADAR 1

Chair: Dr. Brian Brisco

2:00 – 2:20 **An Overview of Compact Polarimetry. (#503)**

R. Keith Raney

Johns Hopkins University, Applied Physics Laboratory

2:20 – 2:40 **CCRS-China RADARSAT-2 Applications Research Program Overview. (#498)**

Brian Brisco (1), Ridha Touzi (1), Joost van der Sanden (1), Bert Guindon (1), Ying Zhang (1), Guo Huadong (2), Li Zhen (2), Liao Jinjuan (2) and Liu Guang (2)

1 - Canada Centre for Remote Sensing

2 - Centre for Earth Observation and Digital Earth Chinese Academy of Sciences, Beijing, China

2:40 – 3:00 **RADARSAT-2: Serving Canadians. (#476)**

Daniel De Lisle, Denis Auger, Luc Brûlé

Canadian Space Agency

3:00 – 3:20 **Teaching RADARSAT across disciplines (#541)**

Elizabeth L. Simms, Memorial University

3:20 – 3:30 **Panel Discussion**

Tuesday June 23: 2:00 – 3:30 pm. Room PE-275

Oral Session I-C: METHODS 1

Chair: Dr. J.R. Gibson.

2:00 – 2:20 Automation of Geospatial Image Processing for Creating Northern Resource SPOT Mosaics. (#584)

J. R. Gibson and M. Buchheit
Canada Centre for Remote Sensing

2:20 – 2:40 The use of Stereo Satellite Imagery: Applicability and Accuracy Assessment (#486)

Ahmed SHAKER and Wai Yeung YAN: Ryerson University

2:40 – 3:00 Adaptation of Toutin's 3D Physical Math Model for Wide FOV MERIS Full Resolution Data. (#655)

C.V. Schmitt, Th. Toutin
Natural Resources Canada, Canada Centre for Remote Sensing, Ottawa, Canada.

3:00 – 3:20 Image and Terrain-based Estimation of Snow Distribution in the Canadian Rocky Mountains: A Comparison of Spatial Interpolation Methods (#614)

Shiyong Xu and Derek Peddle: Department of Geography, University of Lethbridge

3:20 – 3:30 Panel Discussion

Tuesday June 23: 2:00 – 3:30 pm. Room PE-264

Oral Session I-D: LiDAR 1

Chair: Dr. Chris Hopkinson

2:00 – 2:20 A Framework for Better Surface Description through the Integration of Photogrammetric and LiDAR Data. (#469)

Changjae Kim (1), Ayman Habib (1), Chang-Rak Yoon (2), Sung-Woong Shin (2), and Kyung-Ok Kim (2),
1 - University of Calgary
2 - Department Electronics and Telecommunications Research Institute

2:20 – 2:40 Floating Models for 3D Building Modeling from Topographic Maps and LiDAR Data. (#466)

Sendo Wang (1), Yi-Hsing Tseng (2), and Ayman F. Habib (1)
1 - University of Calgary
2 - National Cheng Kung University

2:40 – 3:00 An Investigation into the Impact of Surface Saturation on Laser Pulse Intensity Data. (#637)

Kevin Garroway (1), Chris Hopkinson (2), and Rob Jamieson (1).
1 - Dalhousie University.
2 - AGRG.

3:00 – 3:20 New Approach for LiDAR System Calibration Based on the Discrepancies Between Overlapping Strips. (#490)

Ayman F. Habib, Ki In Bang, and Ana Kersting, University of Calgary

3:20 – 3:30 Panel Discussion

Tuesday June 23: 3:50-5:20 pm. Room PE-261

Oral Session II-A: ATMOSPHERE

Chair: Dr. A. Predoi-Cross

3:50 – 4:10 Determination of telluric water vapour using absorption measurements of lunar irradiance. (#516)
Richard R. Querel and David A. Naylor, Department of Physics and Astronomy, University of Lethbridge

4:10 – 4:30 Lineshape Study of Carbon Dioxide Transitions for Tropospheric Remote Sensing Applications. (#536)
A. Predoi-Cross (1), A.R.W. McKellar (2), A. Liu (1), C. Povey (1), D. Hurtmans (3),
1 - Department of Physics and Astronomy, University of Lethbridge,
2 - Steacie Institute for Molecular Sciences, National Research Council of Canada
3 - Service de Chimie Quantique et Photophysique, Université Libre de Bruxelles,

4:30 – 4:50 Spectroscopic Study Of Deuterated Fluoroform In The Context Of Atmospheric Greenhouse Gas Monitoring. (#534)
Petr Pracna (1), Adina Ceausu-Velcescu (2), Adriana Predoi-Cross (3), and Brant Billingham (4),
1 - J. Heyrovsky Institute of Physical Chemistry, v.v.i., Academy of Sciences of the Czech Republic
2 - Université de Perpignan, Laboratoire de Mathématiques, Physique et Systèmes, 3 - Canadian Light Source,
3 - University of Lethbridge, Department of Physics and Astronomy,
4 - Canadian Light Source Inc.,

4:50 – 5:10 Spatial Heterodyne Observations of Water in Middle Atmosphere. (#631)
Dr. Yunlong Lin: York University

5:10 – 5:20 Panel Discussion

Tuesday June 23: 3:50-5:20 pm. Room PE-250

Oral Session II-B: RADAR 2

Chair: Dr. Roger DeAbreu

3:50 – 4:10 The Annual Cycle of Vegetation at CFB Shilo as Monitored with Radarsat 2 Polarimetry. (#636)
Joseph R. Buckley, Department of Physics, Royal Military College of Canada

4:10 – 4:30 Classification of Polarimetric SAR Images Using Support Vector Machines. (#573)
Reza Shah Hosseini (1), Iman Entezari (1), Saeid Homayouni (1), Babak Mansouri (2)
1 - University of Tehran
2 - International Institute of Earthquake Engineering and Seismology

4:30 – 4:50 Compact Polarimetry Assessment: Wetlands and Soil Moisture. (#499)
Brian Brisco, François Charbonneau and Mélanie Trudel
Canada Centre for Remote Sensing

4:50 – 5:10 Compact Polarimetry Assessment: Sea Ice. (#500)
Roger DeAbreu (1), Matt Arkett (1), Brian Brisco (2), and François Charbonneau (2)
1 - Canadian Ice Service/Environment Canada
2 - Canada Centre for Remote Sensing

5:10 – 5:20 Panel Discussion

Tuesday June 23: 3:50-5:20 pm. Room PE-275

Oral Session II-C: HAZARDS 1

Chair: Dr. Hamid Assilzadeh

3:50 – 4:10. Enhanced Methodology for Oil Spill Contingency Systems (#527)

Hamid Assilzadeh (1), Yang Gao (1) and Jason K. Levy (2)

1 - University of Calgary

2 - Virginia Commonwealth University, USA

4:10 – 4:30 Katrina's Oil Spill Hazard Evaluation and Analysis Using SAR Image Processing (#525)

Hamid Assilzadeh (1), Jason K. Levy (2), Yang Gao (1)

1 - University of Calgary

2 - Virginia Commonwealth University, USA

4:30 – 4:50 Strategic Decision Making for Terrorism and Disasters in the Oil and Gas Industry: Integrating Geomatics and Conflict Resolution (#)

Jason K. Levy, Sayedur R. Chowdhury and C. Emdad Haque

Virginia Commonwealth University, USA

4:50 – 5:10 Enhancing Emergency Response to Oil and Gas Pipelines Incidents Using a Fuzzy JESS Method (#)

A. Asgary, A. Ghaffari and A. Kong

York University

5:10 – 5:20 Panel Discussion

Tuesday June 23: 3:50-5:20 pm. Room PE-264

Oral Session II-D: OTHER

Chair: Dr. Dirk Werle

3:50 – 4:10 ATIC (Alberta Terrestrial Imaging Center) - an Introduction. (#612)

Erik Kokko - ATIC, Lethbridge Canada.

4:10 – 4:30 The Canadian Centre for Unmanned Vehicle Systems (CCUVS) (#668)

Sterling Cripps, CCUVS, Medicine Hat, AB., Canada.

4:30 – 4:50 An Inventory of Canadian Universities Active in Radar Remote Sensing. (#615)

Dirk Werle, Aerde Environmental Research, Halifax, NS

Guy Aube, Canadian Space Agency, St. Hubert, QC

4:50 – 5:10 The National Land Cover Project for Geobase. (#643)

Alexandre Beaulieu, Natural Resources Canada, Centre for Topographic Information, Ottawa, Canada.

5:10 – 5:20 Panel Discussion

Wednesday June 24: 8:30-10:20 am. Room PE-261

Oral Session III-A: HAZARDS 2

Chair: Dr Hamid Assilzadeh

8:30 – 8:50 Decision Support for Real-time Oil Spill Emergency Management. (#617)

Jason Levy (1), Hamid Assilzadeh (2), and Yang Gao (2)
1 - Virginia Commonwealth University
2 - University of Calgary

8:50 – 9:10 Performance Evaluation of Multi-Spectral and Panchromatic Image Fusion Techniques. (#509)

Qing Guo (1, 2), Siyue Chen (1), Henry Leung (1), Shutian Liu (2)
1 - University of Calgary
2 - Harbin Institute of Technology

9:10 – 9:30 An Architecture of Integrating GIS/RS/GPS in Urban Fire Response System. (#544)

Zhinong Zhong and Yang Gao: University of Calgary

9:30 – 9:50 Emergency Management Systems with Event-Driven GIS. (#557)

Shui Liu (1), Yang Gao (1) and Songnian Li (2)
1 - University of Calgary
2 - Ryerson University

9:50 – 10:10 Use of Web-services for Emergency Response to Oil and Gas Pipeline Incidents (#)

Ali Asgary, Albert Kong and Alireza Ghaffari: York University

10:10 – 10:20 Panel Discussion

Wednesday June 24: 8:30-10:20 am. Room PE-250

Oral Session III-B: RADAR 3

Chair: Dr. Joseph Buckley

8:30 – 8:50 Traitements de données Radarsat-2 pour la cartographie topographique Radarsat-2 data processing for topographic mapping. (#644)

Saïd Kharbouche, Frédéric Happi Mangoua, Daniel Clavet

8:50 – 9:10 Ship Detection using RADARSAT-2 Polarimetric and Simulated Compact Polarimetric Data. (#502)

Chen Liu, Paris W. Vachon
Defence R&D Canada – Ottawa

9:10 – 9:30 Analysis of the Department of National Defence/Canadian Forces Space-Based Surveillance Objectives for the RADARSAT Constellation Mission. (#473)

Mark Ball and Ian Chapman, Defence Research and Development Canada Centre for Operational Research and Analysis (DRDC CORA)

9:30 – 9:50 Soil Moisture Inversion from RADARSAT-2 Images Acquired Over an Agricultural Area. (#475)

Imen Gherboudj (1), Ramata Magagi (1), Aaron Berg (2), and Brenda Toth (3)
1 - Université de Sherbrooke, Centre d'applications et de recherches en télédétection (CARTEL)
2 - University of Guelph
3 - Environment Canada, MSC Hydrometeorology and Arctic Lab, Saskatoon

9:50 – 10:10 On Incidence Angle Dependence in Polarimetric SAR Imagery. (#635)

Joseph R. Buckley, Department of Physics, Royal Military College of Canada

10:10 – 10:20 Panel Discussion

Wednesday June 24: 8:30-10:20 am. Room PE-275

Oral Session III-C: WATER

Chair: Dr. Xulin Guo

8:30 – 8:50 **La classification de l'occupation du sol à partir des images SPOT et RADARSAT-2 au Vietnam du Nord. (#660)**

Kim-Huong Hoang(1), Monique Bernier(1), Sophie Duchesne(1), Minh-Y Tran(2)

(1) Institut National de la Recherche Scientifique (INRS),
Centre Eau, Terre et Environnement (ETE)

(2) Académie des sciences et des technologies du Vietnam
Institut des sciences spatiales

8:50 – 9:10 **Effects of Classification Approaches on CRHM Model Performance. (#526)**

Xulin Guo (1), Xing Fang (1), Lyle Boychuk (2), Adam Minke (1), Cherie Westbrook (1), and John Pomeroy (1)

1 - University of Saskatchewan

2 - Ducks Unlimited Canada

9:10 – 9:30 **Spectral Interpretation of Plankton Blooms and Floating Vegetation in Global Waters. (#533)**

Stephanie King and Jim Gower, Institute of Ocean Sciences

9:30 – 9:50 **Mapping Wetlands Variation Using High Resolution Image in the Pandeiros Wildlife Sanctuary, Brazil. (#511)**

Ivan Seixas Barbosa, Philippe Maillard, Thiago Alencar Silva. Universidade Federal de Minas Gerais

9:50 – 10:10 **Hydrologic modeling of protected area boundary in Sundance Provincial Park using SAR data. (#558)**

David Aldred (1), Jinfei Wang (1), Harold Zwick (2),

1 - University of Western Ontario

2 - Macdonald Dettwiler & Associates

10:10 – 10:20 **Panel Discussion**

Wednesday June 24: 8:30-10:20 am. Room PE-264

Oral Session III-D: HYPERSPECTRAL 1

Chair: Dr. Karl Staenz

8:30 – 8:50 **Terrestrial Imaging Spectroscopy – Some Future Perspectives. (#652)**

Karl Staenz

Alberta Terrestrial Imaging Centre and Department of Geography, University of Lethbridge, Canada.

8:50 – 9:10 **Hyperspectral Remote Sensing Algorithms for Retrieving Forest Chlorophyll Content. (#552)**

Yongqin Lisa Zhang, University of Toronto

9:10 – 9:30 **Inferring Spatial Distribution of Vegetation Nitrogen Content from Airborne Hyperspectral Remote Sensing Imagery. (#605)**

Yongqin Zhang (1), John R Miller (1), Jing M Chen (2).

1 - York University

2 - University of Toronto

9:30 – 9:50 **Improving the Canopy Model Inversion using a Weighting Function. (#549)**

K. Frank Zhang (1), Baoxin Hu (1), Jian-guo Wang (1) and Anne Smith (2)

1 - York University

2 - Agriculture and Agri-Food Canada – Lethbridge Research Station

9:50 – 10:10 **Monitoring Rangeland Community/Health Using Multispectral and Hyperspectral Data. (#568)**

Nadia Rochdi (1), Peter Eddy (1), Jinkai Zhang (1), Karl Staenz (1,2), Livio Fent (3), Barry Adams (3), Anne Smith (4).

1 - Alberta Terrestrial Imaging Center

2 - Department of Geography, University of Lethbridge

3 - Alberta Sustainable Resources Development

4 - Agriculture and Agri-Food Canada – Lethbridge Research Station

10:10 – 10:20 **Panel Discussion**

Wednesday June 24: 10:40 a.m. -12:10 p.m. Room PE-261

Oral Session IV-A: MODELING

Chair: Dr. Derek Peddle

10:40 – 11:00 BIOPHYS: A Physically-Based Continuous Fields Algorithm for Ecosystem, Climate and Carbon Models. (#608)

Forrest G. Hall (1), Derek R. Peddle (2), and Fred Huemmrich (1)

1 - NASA GSFC

2 - Department of Geography, University of Lethbridge

11:00 – 11:20 Adaptive Full-Blind Multiple Forward-Mode Canopy Reflectance Model Inversion of Forest Structure in Mountain Pine Beetle Damaged Stands, Central British Columbia. (#610)

Derek R. Peddle (1), Sarah Boon (1), Aaron P. Glover (1), and Forrest G. Hall (2)

1 - Department of Geography, University of Lethbridge

2 - NASA GSFC

11:20 – 11:40 Characterization of Olive (*Olea europaea* L.) Tree Crowns Using Terrestrial Laser Scanning and 3D Radiative Transfer Modeling. (#630)

Inian Moorthy (1), John R., Miller (1), Jose A. Jimenez-Berni (2), Pablo J. Zarco-Tejada (2), Baoxin Hu (1)

1 - Center for Research in Earth and Space Science, York University,

2 - Instituto de Agricultura Sostenible (IAS), Consejo Superior de Investigaciones Cientificas (CSIC), Córdoba, Spain

11:40 – 12:00 Modelling and Mapping Forest Structural Complexity using High Resolution Airborne Imagery and Topographic Information. (#659)

Jon Pasher and Doug King

Department of Geography and Environmental Studies, Carleton University, Ottawa, Canada

12:00 – 12:10 Panel Discussion

Wednesday June 24: 10:40 a.m. -12:10 p.m. Room PE-250

Oral Session IV-B: CRYOSPHERE

Chair: Dr. Laurence Gray

10:40 – 11:00 Remote Sensing of Glacial Ice in the Canadian Arctic. (#651)

Laurence Gray (1) and Dave Burgess (2)

1 - Natural Resources Canada, Canada Centre for Remote Sensing, Ottawa, Canada.

2 - Natural Resources Canada, Geological Survey of Canada, Ottawa, Canada.

11:00 – 11:20 Utilisation conjointe de données de micro-ondes passives et actives pour le suivi du gel saisonnier du sol de la toundra dans le Nord du Québec. (#654)

Parvin Kalantari, Maxime Rousseau et Monique Bernier

INRS, Centre Eau Terre Environnement, Québec, Canada.

11:20 – 11:40 Lake Ice Monitoring using Multi-Polarized SAR Imagery. (#465)

Torsten Geldsetzer, Joost van der Sanden and Brian Brisco

Canada Centre for Remote Sensing, Ottawa, Ontario

11:40 – 12:00 Monitoring Glacial Change with ALOS PALSAR. (#604)

Don Atwood, Franz Meyer

Geophysical Institute, University of Alaska Fairbanks

12:00 – 12:10 Panel Discussion

Wednesday June 24: 10:40 a.m. -12:10 p.m. Room PE-275

Oral Session IV -C: VEGETATION

Chair: Dr. Nicholas Coops

10:40 – 11:00 Mapping Leaf Area Index (LAI) through SPOT Images in a Managed Forest in Central Mexico. (#574)

J. René Valdez-Lazalde (1), Carlos Arturo Aguirre-Salado (2), Gregorio Ángeles-Pérez (1), Hector M. De los Santos-Posadas (1).

1 - Colegio de Postgraduados

2 - Universidad Autonoma de San Luis Potosi

11:00 – 11:20 Predicting Tree Species Distribution in the Southern Gulf Islands, Canada, using ASD FieldSpec3, AISA and Mark II Data Fusion. (#662)

Trevor Jones (1), Nicholas Coops (1), and Tara Sharma (2),

1 - University of British Columbia

2 - Parks Canada

11:20 – 11:40 Global Monitoring of Green House Gases using A Constellation of three Micro-Satellites. (#632)

Dr.Yunlong Lin

York University

11:40 – 12:00 Design And Qualification Of The Sac-D NIRST Flight Model Radiometer. (#650)

François Châteauneuf (1), Linh Ngo Phong (2), Mélanie Leclerc, (1), Linda Marchese(1), Patrice Côté (1), Claude Chevalier (1), and Hugo Marraco (3),

1 - INO, Quebec City, Quebec, Canada

2 - Canadian Space Agency

3 - Comisión Nacional de Actividades Espaciales

12:00 – 12:10 Panel Discussion

Wednesday June 24: : 10:40 a.m. -12:10 p.m. Room PE-264

Oral Session IV -D: LiDAR 2

Chair: Dr. Dustin Whalen

10:40 – 11:00 Topographic LiDAR – Providing a New Perspective in the Mackenzie Delta. (#649)

Dustin Whalen (1), Don Forbes (1), Chris Hopkinson (2), JC Lavergne (3), Gavin Manson (1), Phillip Marsh (4), Steve Solomon (1).

1 – Natural Resources Canada, Geological Survey of Canada, Ottawa, Canada.

2 - Applied Geomatics Research Group, Centre of Geographic Sciences, Lawrencetown, Canada.

3 - Natural Resources Canada, Geodetic Survey Division, Ottawa, Canada.

4 - National Water Research Institute, Saskatoon, Canada.

11:00 – 11:20 Combining Interannual Airborne Lidar and Diurnal Oblique Thermal Imagery to Investigate Glacial Moraine Dynamics. (#488)

Chris Hopkinson (1), John Barlow (2), Mike Demuth (3) and John Pomeroy (2)

1 – Applied Geomatics Research Group, NSCC Annapolis Valley Campus, Nova Scotia

2 – Department of Geography, University of Saskatchewan, Saskatoon

3 – National Glaciology Program, Geological Survey of Canada, Ottawa

11:20 – 11:40 The use of LiDAR and High-Resolution Aerial Photography to Assess the Influence of Forest Structure on Snow Accumulation and Ablation in Extensively Disturbed Forests. (#663)

Andres Varhola (1), Nicholas Coops (1), Pat Teti (2), Sarah Boon (3), Markus Weiler (4), Christopher Bater (1)

1 - University of British Columbia

2 - BC Ministry of Forests and Range

3 - University of Lethbridge

4 - Universität Freiburg

11:40 – 12:00 TBA

12:00 – 12:10 Panel Discussion

Wednesday June 24: 3:30-5:20 pm. Room PE-261

Oral Session V-A: FORESTRY 1

Chair: Dr. Laura Chasmer

- 3:30 – 3:50 **Spatial Modeling of Foliar Nutrients Using Hyperspectral and LIDAR Remote Sensing at a Boreal Mixedwood Forest in Northern Ontario, Canada. (#597)**
Kemal Gökkaya (1), Valerie Thomas (1), Tom Noland (2), Harry McCaughey (3), Ian Morrison (4), and Paul Treitz (3)
1 - Virginia Tech / 2 - Ontario Ministry of Natural Resources
3 - Queen's University / 4 - Canadian Forest Service
- 3:50 – 4:10 **Spatial Partitioning of CO2 Fluxes Based on Canopy Structure Within a Heterogeneous Managed Boreal Wetland Ecosystem (#666)**
Laura Chasmer (1), Richard Petrone (1), Scott Brown (1), Chris Hopkinson (2), Natascha Kljun (3), and Kevin Devito (4)
1- Cold Regions Research Centre, Dept. of Geography, Wilfrid Laurier University
2 - Applied Geomatics Research Group, Centre of Geographic Sciences, Nova Scotia Community College,
3 - Department of Geography, Swansea University, Swansea, UK,
4 - Department of Biological Sciences, University of Alberta.
- 4:10 – 4:30 **Spatial Modeling of Carbon Stocks Using Discrete Multi-Return Lidar Data in a Sub Boreal Forest: a Comparison To Optical Remote Sensing. (#646)**
Darren Janzen, Claudette Bois, Roger Wheate, and Arthur Fredeen: University of Northern British Columbia
- 4:30 – 4:50 **Development of an Annual Forest Change Product for Canada from 250m MODIS Data. (#479)**
Darren Pouliot, Rasim Latifovic, Richard Fernandes and Ian Olthof: Canada Centre for Remote Sensing
- 4:50 – 5:10 **Spatiotemporal Dynamics of MODIS-based Leaf Area Index in the Boreal Forest in Northern Alberta. (#513)**
Quazi K. Hassan (1) and Charles P.-A. Bourque (2)
1 - University of Calgary / 2 - University of New Brunswick
- 5:10 – 5:20 **Panel Discussion**

Wednesday June 24: 3:30-5:20 pm. Room PE-250

Oral Session V-B: RADAR 4

Chair: Dr. Paris Vachon

- 3:30 – 3:50 **Comparing C- And L-Band Radar for Mapping Riparian Wetlands in the Brazilian Savannah Context: An Approach Using Unsupervised Image Segmentation. (#496)**
Thiago de Alencar-Silva and Philippe Maillard, Universidade Federal de Minas Gerais
- 3:50 – 4:10 **Measurement of Snow Water Equivalent and Depth using Differential Interferometric Synthetic Aperture Radar. (#553)**
Ali Esmaily G.(1) Hardy B. Granberg (1), Q. Hugh J. Gwyn (2),
1 - Université de Sherbrooke
2 - Infoterra CO.
- 4:10 – 4:30 **Recent Results on Forest Height and DTM Extraction using a Single-Pass Fully Polarimetric L-Band InSAR System. (#611)**
Bryan Mercer (1), Qiaoping Zhang (1), Marcus Schwaebisch, Michael Denbina
1- Intermap Technologies Corp.
- 4:30 – 4:50 **Creation and Evaluation of DEMs from TerraSAR-X Stereo Images. (#480)**
Chen Xu[1], Stephen Griffiths[1], Parivash Lumsdon[2], Bryan Mercer[1], and Qiaoping Zhang[1]
Intermap Technologies Corp.
- 4:50 – 5:10 **Demonstration of RADARSAT-2 and Space-based Automatic Identification System (AIS) for Ship Detection. (#616)**
Paris W. Vachon (1), Nicholas Sandrasegaram(1), Ryan English(1), Jeff Secker(1), and Ian D'Souza (2)
1 - Defence R&D Canada – Ottawa
2 - COM DEV Canada
- 5:10 – 5:20 **Panel Discussion**

Wednesday June 24: 3:30-5:20 pm. Room PE-275

Oral Session V-C: METHODS 2

Chair: Dr. Geoffrey J. Hay

3:30 – 3:50 Object-Oriented Classification of Multi-Resolution Images For the Extraction of Narrow Linear Forest Disturbance. (#521)

Yuhong He (1), Steven E. Franklin (1), Xulin Guo (1), Greg J. McDermid (2), Gordon Stenhouse (3)

1 - Department of Geography and Planning, University of Saskatchewan,

2 - Department of Geography, University of Calgary,

3 - Foothills Model Forest.

3:50 – 4:10 Comparing Remote-Sensing and Climate-Based Methods for Modeling Pine Species. (#627)

Adam McLane (1), Greg McDermid (1), Nicholas Coops (2)

1 - University of Calgary

2 - University of British Columbia

4:10 – 4:30 Object-Oriented Urban Tree Cover Extraction from High-Resolution Colour-Infrared Aerial Imagery. (#550)

Brad Lehrbass (1), Jinfei Wang (1), Ian Smyth (2), John Bontje (3),

1 - Department of Geography, University of Western Ontario

2 - Ontario Ministry of Natural Resources

3 - GIS and Information Systems, City of London, London, Ontario, Canada

4:30 – 4:50 Wetland Classification in the Boreal Plains of Alberta: A Multiscale Geographic Object-Based Image Analysis (GEOBIA). (#594)

Ryan Powers, Geoffrey J. Hay: University of Calgary

4:50 – 5:10 A Geographic Object-Based Image Analysis (GEOBIA) Approach to Estimate Forest Vertical Structure Using Optimal Lidar Transects and Quickbird Data. (#467)

Gang Chen, Geoffrey J. Hay: Department of Geography, University of Calgary

5:10 – 5:20 Panel Discussion

Wednesday June 24: 3:30-5:20 pm. Room PE-264

Oral Session V-D: HYPERSPECTRAL 2

Chair: Dr. H. Peter White

3:30 – 3:50 Far-Infrared Imaging Fourier Transform Spectroscopy. (#546)

Locke D. Spencer and David A. Naylor, University of Lethbridge, Department of Physics and Astronomy.

3:50 – 4:10 First Field Tests of realSens; for Detection of Leaks of Natural Gas. (#607)

Boyd T. Tolton (1), Doug Miller, and Adrian Banica

1 - Synodon Inc., Edmonton, AB

4:10 – 4:30 Spectral Reflectance Retrieval for Mineralogical and Remote Sensing Analysis of Historical Gold Mine Tailings Sites in Nova Scotia, Comparisons and Comments. (#575)

H.P.White (1) and J.B. Percival (2)

1 - Canada Centre for Remote Sensing, Natural Resources Canada

2 - Geological Survey of Canada, Natural Resources Canada

4:30 – 4:50 Spectrophotometric Detection Of Phellinus sulphurascens Colonization In Douglas-Fir (Pseudotsuga menziesii) Foliage. (#494)

Geoff Quinn (1), K. Olaf Niemann (1) and David G. Goodenough (2)

1 - University of Victoria

2 - Natural Resources Canada

4:50 – 5:10 Towards developing an appropriate means of characterizing Arctic vegetation in the Canadian North using hyperspectral image data. (#576)

R.P. Gauthier, H.P. White, R.J. Soffer, and B. Brisco: Canada Centre for Remote Sensing, Natural Resources Canada

5:10 – 5:20 Panel Discussion

Thursday June 25: 8:30-10:20 am. Room PE-261

Oral Session VI-A: GLOBAL CHANGE

Chair: Dr. Joseph M. Piwowar

8:30 – 8:50 Integration of Earth Observation and Ancillary Data in the Production of an Historical National Land Use Map of Canada. (#647)

Ted Huffman (1), Mark McGovern (2), Don Leckie (3), David Hill (3), Robby Bemrose (1), Flavius Rogrovan (2), Dominique Blain (2), Nancy Hoffmann (4) and Morgan Cranny (3)

1 - Agriculture and Agri-Food Canada, Ottawa ON / 2 - Environment Canada, Greenhouse Gas Division Gatineau, QC

3 - Natural Resources Canada, Canadian Forest Service, Victoria, BC / 4 - Statistics Canada, Ottawa, ON

8:50 – 9:10 AMSR-E Passive Microwave Brightness Temperatures for Snow Properties Retrieval Compared with In-Situ Measurements Across a Boreal Forest to Taiga Transect in Quebec. (#639)

Alain Royer, Alexandre Langlois and Kalifa Goïta: Université de Sherbrooke

9:10 – 9:30 North American Land Change Monitoring System Present and Future. (#481)

Rasim Latifovic (1), Darren Pouliot (1), Collin Homer (2), Chandra Giri (2), Francisco Takaki (3), Rainer Ressler (4),

1 - Canada Centre for Remote Sensing

2 - U.S. Geological Survey

3 - National Institute of Geographic Statistics and Information of Mexico

4 - Mexico National Commission for the Knowledge and Use of Biodiversity

9:30 – 9:50 Spectral and Spatial Variability within the Northern Mixed-Grass Prairie. (#571)

Joseph M. Piwowar. University of Regina

9:50 – 10:10 Quantifying Change in Peat Plateau and Wetland Areas within the Discontinuous Permafrost Zone: 1947 To Present. (#667)

Laura Chasmer (1), Chris Hopkinson (2), William Quinton, and Masaki Hayashi (3)

1 - Wilfrid Laurier University

2 - Centre of Geographic Sciences

3 - University of Calgary

10:10 – 10:20 Panel Discussion

Thursday June 25: 8:30-10:20 am. Room PE-250

Oral Session VI-B: ECOLOGY 1

Chair: Dr. Karl Huemmerich

8:30 – 8:50 A Model-Based Approach To Examining The Reduction Of Noise In NDVI Time Series. (#522)

Jennifer Hird and Greg McDermid: Foothills Facility for Remote Sensing and GIScience, Dept of Geography, University of Calgary

8:50 – 9:10 Land Use Land Cover Change Detection Through Fragmentation Analysis. (#554)

Kristi Fedec and Xulin Guo: University of Saskatchewan.

9:10 – 9:30 The Impact of Sampling Intensity and Failed GPS Acquisition on Animal Home Range Estimation. (#645)

Aleksandra Sobol (1), Julia Linke(1), Gregory J. McDermid (1), John Boulanger (2), and Gordon Stenhouse (3),

1 - Foothills Facility for Remote Sensing and GIScience, Department of Geography, University of Calgary

2 - Integrated Ecological Research, Nelson, Canada.

3 - Foothills Research Institute and Alberta Fish and Wildlife Division, Hinton, Canada.

9:30 – 9:50 Suitable Vegetation Indices on Monitoring Temporal Variation of Leaf Area Index in Mixed Grassland. (#529)

Zhaoqin Li and Xulin Guo, University of Saskatchewan

9:50 – 10:10 Remote Sensing of Ecosystem Light Use Efficiency. (#602)

Karl F. Huemmerich (1), Elizabeth Middleton (2), David Landis (3),

Andy Black (4), Alan Barr (5), J. Harry McCaughey (6), Forrest G. Hall (1).

1 - University of Maryland / 2 - NASA Goddard Space Flight Center / 3 - SSAI / 4 - University of British Columbia

5 - Climate Research Branch, Meteorological Service of Canada / 6 - Queens University.

10:10 – 10:20 Panel Discussion

Thursday June 25: 8:30-10:20 am. Room PE-275

Oral Session VI-C: METHODS 3

Chair: Dr. Philippe M. Teillet

8:30 – 8:50 Remote Sensing at the Flight Research Laboratory: Applying the Tools and Techniques to Diverse Disciplines. (#468)

George Leblanc (1), Ramesh Srinivasan (1), Mengistu Wolde (1), Dave Marcotte (1), Sion Jennings (1), Greg Craig (1), Brad Nelson (2), Elizabeth Pattey (3)

1 - Flight Research Laboratory

2 - Defence Research and Development Canada

3 - Agriculture and Agri-Food Canada

8:50 – 9:10 High-Performance Field and Laboratory Goniometer for Measuring Hyperspectral Bi-directional Reflectance Characteristics of Various Agricultural Canopies. (#581)

Craig A. Coburn (1), Scott D. Noble (2)

1 - University of Lethbridge

2 - University of Saskatchewan

9:10 – 9:30 Image-Based Measurements of Vegetation BRDF Characteristics. (#483)

Philippe M. Teillet (1), Xiaomeng Ren (1), Refah Seyed-Mahmoud (1), Craig Coburn (2), Anne M. Smith (3,2), and Scott Noble (4)

1 - Department of Physics and Astronomy, University of Lethbridge / 2 - Department of Geography, University of Lethbridge

3 - Agriculture and Agri-Food Canada / 4 - Department of Agricultural and Bioresource Engineering, University of Saskatchewan

9:30 – 9:50 Anisotropic Reflectance Effects on the Sensitivity of Spectral Indices for Estimating Ecophysiological Parameters. (#613)

Craig Coburn, Eric Van Gaalen, Derek Peddle, Lawrence Flanagan: University of Lethbridge.

9:50 – 10:10 Post-Launch Monitoring of Satellite Sensor Calibration Using Rangeland Terrain as a Reference Site. (#482)

Philippe M. Teillet (1), Xiaomeng Ren (1), and Anne M. Smith (2),

1 - Department of Physics and Astronomy, University of Lethbridge

2 - Agriculture and Agri-Food Canada

10:10 – 10:20 Panel Discussion

Thursday June 25: 8:30-10:20 am. Room PE-264

Oral Session VI-D: LiDAR 3

Chair: Dr. Chris Hopkinson

8:30 – 8:50 Investigating Terrain Controls On Vegetation Height And Fractional Cover Using Airborne Lidar. (#489)

Chris Hopkinson, Applied Geomatics Research Group, NSCC Annapolis Valley Campus, Nova Scotia

8:50 – 9:10 A Structural Analysis for Single Tree Classification Using Airborne Lidar Data. (#505)

Jili Li, Baoxin Hu, and Gunho Sohn: Department of Earth and Space Science and Engineering, York University.

9:10 – 9:30 The Application Of ALS LIDAR Data to Differentiate Among Three Classes of Increasing Structural Complexity in Boreal Spruce and Mixedwood Forest Types. (#520)

Ben Kuttner and Jay Malcolm: University of Toronto

9:30 – 9:50 Using a Markov Network For Individual Tree Detection From Airborne Laser Scanning Data (#495)

Junjie Zhang and Gunho Sohn: GeolCT Lab, Department of Earth and Space Science and Engineering, York University

9:50 – 10:10 Measurement of Tree-Level Attributes in Heterogeneous Stands Using Terrestrial Laser Scanners. (#585)

Caroline Rivest (1), Richard A. Fournier (1), Chhun-Huor Ung (2), Enda Keane (3), Garret Mullooly (3), Hans Pretzsch (4), Hans-Joachim Klemmt (4).

1 - Université de Sherbrooke / 2 - Sciences Canadian Service Forest

3 - TreeMetrics Ltd. / 4 - Technische Universität München

10:10 – 10:20 Panel Discussion

Thursday June 25: 1:30-3:20 pm. Room PE-261

Oral Session VII-A: FORESTRY 2

Chair: Dr. Ron Hall

- 1:30 – 1:50 Comparing Change Detection Methods based on a Vegetation Index and Canopy Reflectance Model for the Detection of Aspen Dieback from Multi-temporal Landsat Thematic Mapper Data. (#515)

Eric J. Arsenault, Ron J. Hall, E.H. (Ted) Hogg, and Michael Michaelian
Natural Resources Canada, Canadian Forest Service

- 1:50 – 2:10 Characterizing the Spectral Trajectory of Cerrado Regeneration to Estimate Its Age. (#497)

Priscilla de Souza da Costa-Pereira and Philippe Maillard: Universidade Federal de Minas Gerais

- 2:10 – 2:30 Mapping Eastern Spruce Budworm Cumulative Defoliation Severity from Landsat and SPOT. (#658)

R.J. Hall (1), M. Filiatrault (1), A. Deschamps (2), E. Arsenault (1). Natural Resources Canada:
1 - Canadian Forest Service
2 - Canada Centre for Remote Sensing.

- 2:30 – 2:50 Mapping the Health of Forests. (#493)

David G. Goodenough (1), K. Olaf Niemann (2), Geoff Quinn (1), and Jessie Liu (1)
1 - Natural Resources Canada
2 - University of Victoria

- 2:50 – 3:10 The Synthetic Crown Recognition Model for Automatic Image Interpretation on UltraCamD Imagery. (#653)

Chengqian Zhang (1), Michael Collins (1), Don Leckie (2) and François Gougeon (2)
1 - Department of Geomatics Engineering, University of Calgary
2 - Natural Resources Canada, Canadian Forest Service, Pacific Forest Centre

- 3:10 – 3:20 Panel Discussion

Thursday June 25: 1:30-3:20 pm. Room PE-250

Oral Session VII-B: ECOLOGY 2

Chair: Dr. Greg McDermid

- 1:30 – 1:50 An Object-Oriented Approach to Identifying Eelgrass along the Gulf of St. Lawrence Using High-Resolution Optical Imagery. (#472)

Matthew Mahoney (1), Herb Vandermeulen (2), Al Hanson (1), Venitia Joseph (2), Guy Robichaud (2).
1 - Environment Canada
2 - Department of Fisheries and Oceans

- 1:50 – 2:10 Using new earth observation products for a nationwide assessment of ecosystem status and trends. (#532)

Frank Ahern (1) and Risa Smith (2)
1 - TerreVista Earth Imaging / 2 - Environment Canada

- 2:10 – 2:30 Remote Sensing and Forest Inventory for Wildlife Habitat Assessment. (#624)

G.J. McDermid (1), R.J. Hall (2), G.A. Sanchez-Azofeifa (3), S.E. Franklin (4), G.B. Stenhouse (5), T. Kobliuk (6), E.F. LeDrew (7)
1 - Foothills Facility for Remote Sensing and GIScience, Department of Geography, University of Calgary,
2 - Canadian Forest Service, Northern Forestry Centre / 3 - Department of Earth and Atmospheric Science, University of Alberta,
4 - Department of Geography, University of Saskatchewan / 5 - Foothills Research Institute and Alberta Fish and Wildlife Division,
6 - Forest Management Branch, Public Lands and Forest Division, Sustainable Resource Development, Edmonton, AB

- 2:30 – 2:50 Research on Relationships between Landscape Spatial Pattern and Grizzly Bear Appearance in Agricultural Areas in Alberta. (#579)

Kai Wang, Adam Collingwood, Steven Franklin and Xulin Guo. University of Saskatchewan.

- 2:50 – 3:10 Tracking Annual Landscape Change in the Rocky Mountain Foothills of Alberta: An Application of the Disturbance-Inventory Monitoring Framework. (#621)

J. Linke, G. McDermid Department of Geography, University of Calgary, Calgary, Alberta

- 3:10 – 3:20 Panel Discussion

Thursday June 25: 1:30-3:20 pm. Room PE-275
Oral Session VII-C: METHODS 4
Chair: Mr. Neal Pilger

- 1:30 – 1:50 Thermal Remote Sensing of the Greater Toronto Area Urban Heat Island. (#578)
Matt Maloley, CCRS, Natural Resources Canada
- 1:50 – 2:10 Architecture of an Intelligent System for Remote Sensing Image Processing and Classification. (#547)
Mohammad Mostafa Kamal, Department of Geography, University of Saskatchewan,
- 2:10 – 2:30 MFM Canopy Reflectance Modeling of Forest Stand Height in Mountainous Terrain, Kananaskis Alberta. (#609)
Neal Pilger (1, 2), Derek R. Peddle (1) and Ronald J. Hall (3, 1)
1 - Department of Geography, University of Lethbridge
2 - Department of Geography, Queen's University
3 - CFS-NFC Edmonton
- 2:30 – 2:50 Automatic Surface Reflectance Retrieval from SPOT Data using MODTRAN-based Look-up-table. (#569)
Jinkai Zhang (1), Karl Staenz (1,2), Nadia Rochdi (1), Philippe M. Teillet (2)
1 - Alberta Terrestrial Imaging Center
2 - University of Lethbridge
- 2:50 – 3:10 An Assessment of Compact Polarimetry for Crop Classification. (#501)
Heather McNairn, Jiali Shang, Catherine Champagne, Francois Charbonneau and Amine Merzouki
Agriculture and Agri-Food Canada
- 3:10 – 3:20 Panel Discussion

Thursday June 25: 1:30-3:20 pm. Room PE-264
Oral Session VII-D: GEOLOGY
Chair: TBA

- 1:30 – 1:50 Erosion Estimation Using Remote Sensing Data - An Approach for Northern Pakistan and Adjoining Regions. (#656)
Syed Amer Mahmood, Arief Wijaya, Mathias Leidig, Faisal Shahzad, and Richard Gloaguen
Remote Sensing Group, Institute of Geology, TU-Bergakademie Freiberg, Germany
- 1:50 – 2:10 Observing ground deformation in the city of Auckland, New Zealand by C- and L-band Synthetic Aperture Radar. (#477)
Sergey Samsonov. University of Western Ontario and GNS Science
- 2:10 – 2:30 Investigation of Landslides and Subsidence in Alberta Using Persistent Scatterer Interferometry. (#487)
John Dehls (1), Corey Froese (1) Valentin Poncos (2), Shilong Mei (1), and Vern Singhroy (3)
1 - Alberta Geological Survey
2 - University of Calgary
3 - Canada Centre for Remote Sensing
- 2:30 – 2:50 TBA
- 2:50 – 3:10 TBA
- 3:10 – 3:20 Panel Discussion

30th/30^e CSRS Lethbridge

TECHNICAL PROGRAM: POSTER SESSIONS

Tuesday June 23: 2:00 – 3:30 pm. Room: Foyer.

Poster Session I

Evaluation of alternative remote sensing land cover products for modeling and monitoring forest bird habitat in the Western Boreal Plains. (#588)

Evan Seed (1), Steven Cumming (2), Erin Bayne (3), Jason Duffe (1), Ken Baldwin (4)

1 - Environment Canada, National Wildlife Research Centre, Carleton University

2 - Sciences du Bois et de la Forêt, Université Laval, Québec

3 - Department of Biological Sciences, University of Alberta, Edmonton

4 - Natural Resources Canada, Canadian Forest Service, Great Lakes Forestry Centre

Twenty-five year monitoring of the Mealy Mountains, Labrador, tree line. (#593)

Élizabeth L. Simms, Alvin Simms and Heather Morrison, Memorial University

Mapping and Update of Vegetation and Land Cover for Grizzly Bear Research and Conservation in Alberta. (#628)

G.J. McDermid (1), S.E. Nielsen (2), J.N. Hird (1), D.N. Laskin (1), S.E. Franklin (3), and G.B. Stenhouse (4)

1 - Foothills Facility for Remote Sensing and GIScience, Department of Geography, University of Calgary,

2 - Department of Renewable Resources, University of Alberta,

3 - Department of Geography and Planning, University of Saskatchewan,

4 - Foothills Research Institute and Alberta Fish and Wildlife Division,

Blanding's Turtle (*Emydoidea blandingii*) Potential Habitat Mapping in Gatineau Park, Quebec, Using Aerial Orthophotographic Imagery. (#555)

Rebecca Barker and Doug King, Carleton University

Mapping the cumulative footprint of anthropogenic and natural disturbances in the boreal forests of Canada with the Landcover Change Mapper (LCM). (#625)

A.Fraser, G. Castilla, J.Linke, and G. McDermid

Foothills Facility for Remote Sensing and GIScience, Department of Geography, University of Calgary,

Monitoring grassland biophysical parameters and carbon fluxes of montane grasslands using remote sensing measurements. (#590)

Loris Vescovo (1), Damiano Gianelle (1), Georg Wohlfahrt (2) and Manuela Balzarolo (3)

1 - CRI, Fondazione Mach, Trento, Italy

2 - University of Innsbruck, Austria

3 - Università della Tuscia, Viterbo, Italy

**Tuesday June 23: 2:00 – 3:30 pm. Room: Foyer.
Poster Session I (continued)**

Evaluating Land Cover Classification Accuracy for the Rare Hairy Prairie Clover. (#524)

Sarah Lowe, University of Saskatchewan

Influence of the extent of sample landscapes on the accuracy of human footprint statistics in the context of biodiversity monitoring. (#626)

Adam McLane, Jennifer Hird, Julia Linke, Guillermo Castilla, and Greg McDermid

Foothills Facility for Remote Sensing and GIScience, Department of Geography, University of Calgary.

Monitoring Wetland Area along the St. Lawrence River: A Multi-Sensor Approach. (#471)

Guy Letourneau, Martin Jean and Caroline Savage: Environment Canada

Land Use Monitoring In the Mixed Wood Plains Ecozone: Current State. (#470)

Guy Letourneau: Environment Canada

Remote Sensing of Vegetation Phenology and Relations to Grizzly Bear Health. (#618)

David Laskin (1), Scott Nielsen (2), Jennifer Hird (1), Greg McDermid (1), Gord Stenhouse (3)

1. Foothills Facility for Remote Sensing and GIScience, Department of Geography, University of Calgary,

2. Department of Renewable Resources, University of Alberta

3. Foothills Research Institute and Alberta Fish and Wildlife Division.

Quantifying the effects of litter on the performance of spectral indices in mixed grassland. (#528)

Xiaohui Yang and Xulin Guo: University of Saskatchewan

Effect of Photo Plot Displacement on Landscape Pattern Analysis: Implications for Biodiversity Monitoring in Alberta. (#622)

J. Linke, G. Castilla, A. McLane, G. McDermid Department of Geography, University of Calgary, Calgary, Alberta

Tuesday June 23: 3:50 - 5:20 pm. Room: Foyer.
Poster Session II

Using Bi-Directional Reflectance to Identify and differentiate crop types using the University of Lethbridge
Lightweight Field Goniometer 2 (ULGS2). (#606)

Steve Myshak (1), Craig Coburn (1), Philippe Teillet (1), Anne M. Smith (2,1)
1 - University of Lethbridge
2 - Agriculture and Agri-Food Canada

A 2006 Land Cover Classification for Agricultural Land in Saskatchewan, Alberta and the British Columbia
Peace River Region. (#633)

David V. Hildebrand (1), Carmen Finnigan (2), Weidong Zhou (2), and Chun Chen (2)
1 - Agriculture Financial Services Corporation
2 - Digital Environmental

Quantifying Biomass Production on Rangeland in Southern Alberta Using SPOT Satellite Imagery. (#580)

Kristin Grant (1, 2), Dan Johnson (2), David V. Hildebrand (3), and Derek Peddle (2)
1 - Iunctus Geomatics Corp., Lethbridge
2 - University of Lethbridge
3 - Agriculture Financial Services Corporation

Agricultural Land Use Classification Accuracy: Comparing Maximum Likelihood Classification to Neural Net
Tree Models using Single and Multi-Date SPOT Imagery. (#591)

Gary L. Larson, Anne M. Smith, Bernard D. Hill and Travis Hulstein
Lethbridge Research Station, Agriculture and Agri-Food Canada

Analysis of northern ET trends and associated regional water balance changes using satellite inputs and
meteorology reanalysis from 1983 to 2005. (#586)

Ke Zhang, John Kimball, Lucas Jones, Qiaozhen Mu and Steven Running: University of Montana, USA

Assessment of Temporal Dynamics and Vegetation Stress Using a Series of Seven-day NOAA AVHRR
NDVI Thematic Images. (#587)

Eugenia Roumenina, Lachezar Filchev, Vanya Naydenova, Georgi Jeleu, Petar Dimitrov, and Vassil Vassilev.
Space Research Institute.

Tuesday June 23: 3:50 - 5:20 pm. Room: Foyer.
Poster Session II (continued)

A Multi-Scale Approach To Extract Savanna Tree Structure Parameters. (#559)

Martin Béland and Richard Fournier
Centre for Research and Applications in Remote Sensing (CARTEL), University of Sherbrooke.

Spectral Separability of Selected Rangeland Plant Species Common to Southern Alberta. (#565)

David Rolfson (1,2), Karl Staenz (1,2), Craig Coburn (2), Philippe Teillet (1,2), Anne Smith (3, 2)
1 - Alberta Terrestrial Imaging Center
2 - University of Lethbridge
3 - Lethbridge Research Station, Agriculture and Agri-Food Canada

Hyperspectral land covers classification using an SVM-based algorithm. (#582)

Reza Shah Hosseini and Saeid Homayouni. University of Tehran

Individual Tree Crown Delineation using Combined LiDAR Data and Optical Imagery. (#596)

Baoxin Hu (1), Wen Zhang (1), Kun Qian (1), and Murray E. Woods (2),
1 - York University, Department of Earth and Space Science and Engineering
2 - Ontario Ministry of Natural Resources

Estimating Snow Volume in the Elbow River Watershed Using Airborne LiDAR. (#491)

Tim Collins (1,2), Chris Hopkinson (1), Axel Anderson (3), Ian Spooner (2)
1 - Applied Geomatics Research Group, NSCC Annapolis Valley Campus, Nova Scotia
2 - Department of Geology, Acadia University, Wolfville, Nova Scotia
3 - Sustainable Resources Development, Government of Alberta, Calgary, Alberta

Hyperspectral Discrimination of Cottonwood Clones in Southern Alberta. (#603)

Aaron Mullin, Craig Coburn: University of Lethbridge

Wednesday June 24: 10:40 a.m. -12:10 p.m. Room: Foyer.
Poster Session III

Spectroscopic Study of the 11102-10002 Band of Pure Carbon Dioxide for Atmospheric Remote Sensing. (#535)

A. Predoi-Cross (1), Amr Ibrahim (1), V. Malathy Devi (2), D. Chris Benner (2), Brant Billingham (3), Phil Teillet (1)
1 - Department of Physics and Astronomy, University of Lethbridge,
2 - Department of Physics, The College of William and Mary, USA
3 - Canadian Light Source.

Spectral Line Parameters For Ethane Fundamental Band At 12 Micron. (#592)

V. Malathy Devi (1), D. Chris Benner (1), C.P. Rinsland (2), R.L. Sams (3), T.A. Blake (3).
1 - Department of Physics, The College of William and Mary, USA
2 - Science Directorate, NASA Langley Research Center, USA
3 - William R. Wiley Environmental Molecular Sciences Laboratory, Pacific Northwest National Laboratory

Remote Sensing of Water Vapour above the Las Campanas Observatory. (#517)

Richard R. Quere (1), David A. Naylor (1), Joanna Thomas-Osip (2), Gabriel Prieto (2)
1 - Department of Physics and Astronomy, University of Lethbridge
2 - Las Campanas Observatory, Chile

Spectroscopy of Methane at 7.6 μ m in Support of NASA's Upper Atmosphere Research Program. (#537)

M. A. H. Smith (1), V. Malathy Devi (2), D. Chris Benner (2), and A. Predoi-Cross (3),
1 - Science Directorate, NASA Langley Research Center, USA
2 - Department of Physics, The College of William and Mary, USA
3 - Department of Physics and Astronomy, University of Lethbridge.

HEAT - Home Energy Assessment Technologies: High Resolution Airborne Thermal Imagery Based Residential Energy Efficiency Monitoring.

Christopher D. Kyle and Geoffrey J. Hay, University of Calgary

Spectral Line Fitting of an Astronomical Source. (#556)

Scott Jones (1), David Naylor (1) and Rene Plume (2)
1 - University of Lethbridge
2 - University of Calgary

Towards Validation of RADARSAT-2 Data and Snow on First-Year Sea Ice Parameterization. (#640)

M. Christopher Fuller and Melissa Peters: University of Calgary

**Wednesday June 24: 10:40 a.m. -12:10 p.m. Room: Foyer.
Poster Session III (continued)**

An Interactive Atmospheric Radiative Transfer Model Application. (#542)

Ian Chapman (1), Peter Davis-Imhof (2), David Naylor (3), Brad Gom (3)

1 - Defence Research and Development Canada, Centre for Operational Research and Analysis (DRDC CORA)

2 - Blue Sky Spectroscopy Inc

3 - Department of Physics and Astronomy, University of Lethbridge

**La classification de l'occupation du sol à partir des images SPOT et RADARSAT-2 au Vietnam du Nord.
(#660)**

Kim-Huong Hoang (1), Monique Bernier (1), Sophie Duchesne (1), Minh-Y Tran (2)

(1) Institut National de la Recherche Scientifique (INRS), Centre Eau, Terre et Environnement (ETE)

(2) Académie des sciences et des technologies du Vietnam, Institut des sciences spatiales

**Effets des changements climatiques en zone tropicale : cas de la disparition des cours d'eau de la région
de Katiola en Côte d'Ivoire. (#634)**

Talnan Jean Honoré COULIBALY (1), Jean Paul DEROIN (1) et Issiaka SAVANE (2)

1 - Université Paris Est, France

2 - Université d'Abobo-Adjamé, Côte d'Ivoire

**Implementation of a New Adaptive Image Representation Approach (AIPR-BPNN) For Compression of
IKONOS Images. (#641)**

V. Sherkashyn (1), D.-C. He (1), R. Kountchev (2)

1 CARTEL- Centre d'Application et de Recherche en Télédétection, Département de Géomatique Appliquée, Sherbrooke, Canada.

2 Department of Radio Communication and Video Technology, Technical University-Sofia, Sofia, Bulgaria

Image Registration of Optical and SAR Images Using Control Point and Area-Based Matching. (#508)

Siyue Chen (1), Chen Xu (2), Henry Leung (1), Anne Smith (3)

1 - University of Calgary

2 - Intermap Technologies Corp.

3 - Agriculture and Agri-Food Canada

**Classification of Polarimetric SAR Data in Toronto Suburban Areas Using Model-Based Decomposition and
Morphology Analysis. (#599)**

Niu, Xin and Yifang Ban

Division of Geoinformatics. Dept. of Urban Planning and Environment, Royal Institute of Technology KTH, Stockholm, Sweden

**Thursday June 25: 1:30 - 3:20 p.m. Room: Foyer.
Poster Session IV**

Intensity Image Integration from RADARSAT-2 Full Polarimetric Data. (#474)

Igor Zakharov (1) and Thierry Toutin (2)

1- Canadian Government Laboratory Visiting Fellow at Canada Centre of Remote Sensing;

2 - Canada Centre of Remote Sensing, Natural Resources Canada

Estimating Forest Structural Attributes From Airborne Remote Sensing Datasets for Use in Mountain Pine Beetle Susceptibility Mapping. (#518)

A.M. Faraguna and G.J. McDermid

Foothills Facility for Remote Sensing and GIScience, Department of Geography, University of Calgary, Calgary

Land Use Mapping at Micro-level: Application of IKONOS Images in South-west Bangladesh. (#512)

Quazi K. Hassan, University of Calgary; Mir A. Matin, International Water Management Institute

The remote sensing of vegetation phenology: questioning the benefits of noise reduction. (#523)

Jennifer Hird and Greg McDermid

Foothills Facility for Remote Sensing and GIScience, Department of Geography, University of Calgary

Assessing the Effect Of Point Density And Terrain Complexity On The Quality Of Lidar-Derived Dens In Multiple Resolutions. (#629)

S. Sanii and G.J. McDermid

Foothills Facility for Remote Sensing and GIScience, Department of Geography, University of Calgary, Calgary, Canada.

Developing Future Carbon Algorithms for SMAP. (#583)

Lucas Jones (1), John Kimball (1), Ke Zhang (1), and Kyle McDonald (2),

1 - University of Montana, USA

2 - Jet Propulsion Laboratory/California Institute of Technology, Pasadena, California USA

Thursday June 25: 1:30 - 3:20 p.m. Room: Foyer.
Poster Session IV (continued)

ALOS PALSAR interferometry of Taupo Volcanic Zone, New Zealand. (#478)

Sergey Samsonov (1, 2), Kristy Tiampo (1), John Beavan (2), Chris Bromley (2), Bradley Scott (2), and Gill Jolly (2)
1 - University of Western Ontario
2 - GNS Science

Advanced research initiatives using the Mackenzie Delta Air Photo Project spatial data. (#543)

Marcella Snijders: Indian & Northern Affairs Canada.

Evaluation of Radar Backscatter Models over Agricultural Fields: Validation Using Polarimetric C-band RADARSAT-2 SAR Image Data. (#514)

Amine Merzouki, Heather McNairn, and Eric Gauthier: Research Branch, Agriculture and Agri-Food Canada

Estimating Prairie Wetland Water Storage Using a LiDAR DEM. (#538)

Adam Minke (1), Cherie Westbrook (1), Xulin Guo (2),
1 - Centre for Hydrology, University of Saskatchewan
2 - Department of Geography and Planning, University of Saskatchewan

Monitoring Freeze/Thaw Conditions over Agricultural Fields from Radarsat-2 Polarimetric Data. (#638)

Louis-Philippe Rousseau (1), Ramata Magagi (1), Robert Leconte (1), Aaron Berg (3), Brenda Toth (4),
1 - Université de Sherbrooke. / 2 - École de technologie supérieure.
3 - University of Guelph / 4 - Environment Canada

Lower Souris River Watershed Biophysical Inventory. (#657)

Lyle Boychuk (1), Bill Tedford (2), and Eric Mayer (1)
1 - Ducks Unlimited Canada. Western Region. South Saskatchewan Operations. Regina, Saskatchewan, Canada.
2 - Ducks Unlimited Canada. National Headquarters. Oak Hammock Interpretive Centre. Stonewall, Manitoba, Canada.