Alberta Terrestrial Imaging Centre LiDAR / SAR wetland and water monitoring workshop, June 26th-27th, 2014

Thursday 26th, 09:00 to 16:30

Venue: University of Lethbridge, Room TBD

Presentations:

Speakers:

09:00 Chris Hopkinson, U Lethbridge – opening remarks

09:05 Tom Dickson, AEMERA, Govt Alberta – Water & wetland monitoring in Alberta

09:30 Marco van der Kooij, MDA – Radarsat data for large area land surveillance

09:55 Brian Brisco, CCRS – Intro to mapping water with Radarsat

10:20 BREAK

10:35 Velentin Poncos, Keplar – SAR water extent mapping

10:55 Aaron Berg, U Guelph – Land cover classification for change detection in the discontinuous permafrost region of the NWT using RADARSAT-2

11:20 Habib Mazaheri, U Calgary – Soil moisture estimation using Synthetic Aperture Radar

11:40 Bonnie Harris, PCI Geomatics – PCI's SAR surface water and ice mapping software tools

12:00 LUNCH

13:00 H. Peter White, CCRS – Hyperspectral wetland mapping for mine site remediation

13:25 Laura Chasmer, U Lethbridge – Lidar data fusion wetland classification

13:50 Tristan Goulden, NEON – Lidar watershed sensitivity and uncertainty research

14:15 Paul LaRocque, Optech – Bathymetric lidar for hydrographic mapping

14:40 BREAK

14:55 Martin Isenburg, rapidlasso GmbH – LiDAR Flood mapping Project in the Philippines

15:20 Chris Hopkinson, U Lethbridge – Alberta water extent mapping pilot study

15:45 Guy Duke, Granduke Geomatics – Online lidar data portal to support enviro services

16:10 Open discussion on remote sensing-based water monitoring and data needs in Alberta

16:30 Close

Friday 27th, 09:00 – 16:30

Lidar / Radar workshop & demo:

Lidar:

09:00 Chris Hopkinson, University of Lethbridge - "Introduction to lidar and its water resources applications"

10:20 BREAK

10:40 Martin Isenburg, rapidlasso, GmbH - "LAStools demonstration; efficient lidar workflow data processing and analysis"

12:00 LUNCH

Radar:

13:00 TBD, Canada Centre for Remote Sensing - "Introduction to SAR"

- Description and background
- SAR applications
- SAR Satellites

13:30 TBD, Canada Centre for Remote Sensing - "SAR Imagery"

- Acquisition
- Characteristics
- Processing

14:00 Valentin Poncos, Keplar - "SAR Image Thresholding"

- Geometric considerations

14:30 BREAK

15:00 SAR Image Thresholding continued

- Dark targets (surface water)
- Bright targets (Flooded vegetation)

15:30 TBD, Canada Centre for Remote Sensing - "SAR polarimetry for flooded vegetation"

- Polarimetry
- Polarimetric Decompositions
- Polarimetric Decompositions for Wetlands

15:00 Valentin Poncos, Keplar - "INSAR water level mapping"

- Introduction to INSAR
- Wetland Coherence
- Wetland INSAR