ABoVE SAR Working Groups

Breakout Report

ASTM-4
Seattle, WA
24 January 2018

SAR WG Cal/Val Plan (1)

- Identified need for organizing field data and developing tools that make the data useful for Cal/Val and synthesis activities

- Several groups have collected field data for Cal/Val of SAR products during the 2017 airborne campaigns, but not all have reported to the ABoVE planning tool

- Pre-2017 field data also exist that are important for Cal/Val but are not currently present in the ABoVE tool. These may include:
  - Other field campaigns (AirMOSS EVS-1, Radarsat-related campaigns)
  - Permanent station data (soil moisture and temperature)

- Things we should not forget:
  - Measurements for Cal/Val of vegetated sites (e.g., tussock characterization, below-ground biomass, etc.)
  - Decoupling effects of biomass and soil moisture, in a range of landcovers and biomass types/amounts

SAR WG Cal/Val Plan (2)

- Proposed Action Items:
  - Email field teams to fill out existing Google Doc spreadsheet with basic information on Where/When/What/Who – Laura already sent out some requests last night; due: end of this week
  - Liz will cross-reference with existing info on ABoVE Planning tool, will contact teams with missing inputs
  - SAR working group to decide the following: level of processing (how ”raw”?), common formats for reporting data, a unified set of metadata fields
  - Organize a “datathon” that could be a face-to-face workshop this spring or summer; may additionally (or instead) consider a series of working telecons to hash out details beforehand
  - Get help of graduate students via summer internships at GSFC, JPL, etc.
  - Develop Cal/Val Plan document with accuracy and uncertainty metrics defined for, e.g., ALT, soil moisture, biomass, organic layer thickness; have rough draft, will be a working document with input from all WGs

- ***ORNL has existing tools and processes to harmonize data that have disparate time and spatial scales: Enlist their help!***
  - All data sets “published” through ORNL will get a DOI and will be citeable
  - They are already ready to accept your data if you are ready for public release

SAR WG Science Impact Plan (1)

- What (new) synthesis questions can we help answer? Examples:
  - Thermokarst vulnerability maps could be improved by using subsidence and ground-ice data
  - Seasonal and Inter-annual change assessment (permafrost, fire, subsidence, etc.) over large swaths
  - Fire recovery
  - Scaling from in-situ and tower footprint to airborne
  - Scaling from airborne to ABoVE domain
  - Cross-scale feedbacks, especially in hydrology: for example, investigating lateral soil moisture effects in thermokarsting by looking at scales from tens of meters to tens of kilometers

- What are the needed common attributes of SAR-derived products for max impact?
  - Data formats for rapid ingestion into models; compatibility with other/ancillary data sets
  - Temporal sampling frequency
  - Spatial coverage
  - Uncertainties

SAR WG Science Impact Plan (2)

- Proposed Action Items:
  - Answer questions on previous page!
  - Engage more frequently and more directly with other WGs; invite all to proposed telecons
  - The face-to-face workshop proposed previously for this spring/summer can be a mini-science-team meeting focused on SAR products
  - ***Assess what we have learned from 2017 campaigns, then use to optimize the next set of campaigns: Did we have enough space/time representation without duplication? Would denser time series be more important than a large number of swaths?***
  - Corollary: are we missing out on important science this year by not collecting data?