SMAP/ICESat-2 Joint Mission Applications Tutorial

Hosted by

Alaska Satellite Facility

Wedgewood Resort, 212 Wedgewood Drive Fairbanks, Alaska

September 18-20, 2012

The SMAP/ICESat-2 tutorial is a unique opportunity to collect and distribute information about different user needs while discussing how SMAP (launch October 2014) soil moisture and surface freeze/thaw state data products can be used in parallel with ICESat-2 (launch 2016) altimetry data.

Goals of the SMAP Applications Tutorial:

- *Value-added data products and science returns from combined SMAP/ICESat-2 data.*
- *Identify the challenges and needs of cryosphere, northern forests, land and ocean science applications.*
- *Identify new users for SMAP mapping radar and ICESat-2 altimetry data, e.g. vegetation mapping, sea-ice mapping, etc.*
- *Motivate joint mission efforts and innovative applications with prelaunch hydrosphere and cryosphere applications using other mission products from existing missions.*

Expected Workshop Outcome: *Connect the mission science with the Alaskan communities in order to indentify the benefits from incorporating SMAP soil moisture, surface freeze/thaw state and ICESat-2 products into existing research, operational applications and local decision-making agencies.*

Day 1	**Tuesday, 18 September 2012** ***Wedgewood Resort's Borealis Room***	
8:00am	**Registration and Coffee**	
8:30am	Bob McCoy, Geophysical Institute Director *(15 min)*	Workshop Welcome
8:45am	Christine Bonniksen, NASA HQ *(30 min)*	SMAP/ICESat-2 Welcome, Introduction to both missions and Charge to Joint Workshop
9:15am	Dara Entekabi (SMAP Science Definition Team Lead) *(20 min)*	SMAP Mission Overview-emphasis on Freeze Thaw
9:35am	Bea Csatho (ICESat-2 Science Definition Team Lead) *(20 min)*	ICESat-2 Mission Overview-compliment to SMAP Freeze Thaw research
9:55am	Molly Brown, NASA GSFC (SMAP Applications Coordinator) *(20 min)*	Mission Applications Strategy for tutorials, Value of pre-mission work for applications
10:20am	Nettie LaBelle-Hamer, ASF Director *(20 min)*	The role of the DAACs.

10:40 to 11:00am	**Morning Break** Questionnaire for freeze/thaw applications	
Research by SMAP Early Adopters		
Speaker		**Topic**
11:00am	Kyle McDonald, JPL/CUNY	***SMAP Freeze Thaw Research***
11:20am	Stephane Belair, Environment Canada	***Assimilation of Passive and Active Data from SMAP***
11:40am	Rafael Ameller, StormCenter Corporation *(Given by Peter Webly, U of Alaska, Fairbanks)*	***Collaborative decision environments for volcanic effluent hazards***
LUNCH 12:00-1:30pm (Locally)		
Research presentation topics and panel discussion ***Identifying challenges and addressing where there are needs for data***		
1:30pm	Prasad Gogineni (University of Kansas) *(20 min)*	***Radar Instrumentation for Airborne Measurements on ice sheets and sea ice: Status and Future***
1:50pm	Donald (Skip) Walker (University of Alaska Fairbanks) *(20 min)*	***Greening of the Arctic in relationship to changing sea-ice and permafrost conditions***
2:10pm	Bob Shuchman (Michigan Tech Research Institute) *(20 min)*	***Alaska Land Management and the NSSI***
2:10-2:20pm	**Afternoon Break** *Please use this opportunity to fill out survey*	
2:20-2:35pm	Billy Connor (University of Alaska Fairbanks) *(15 min)*	***Roads & Airports on Warm Permafrost***
2:35-2:50pm	Guido Grosse (University of Alaska Fairbanks) *(15 min)*	***Premafrost Dynamics in a warming Arctic-Process and remote sensing data needs.***
2:50-3:05pm	Anthony Arendt (University of Alaska Fairbanks) *(15 min)*	***Glaciers and climate change and Sea Ice***
2:50-3:20pm	Anna Liljedahl (University of Alaska Fairbanks) *(15 min)*	***Water Management in Alaska – the Susitna Dam***
3:20-3:35pm	Jessie Cherry (University of Alaska Fairbanks) *(15 min)*	***Airborne remote sensing and hydrologic research at ASF***
3:35pm-4:30pm	**Panel discussion** **(Early adopters, Mission and DAAC Scientists: Kyle McDonald, Bea Csthao and Ted Scambos)** *How can new mission data address the challenges and concerns presented*?	
4:30pm	***Day 1 Adjourn***	
Day 2	**Wednesday, 19 September 2012** ***Wedgewood Resort's Borealis Room***	
8:00am	**Registration and Coffee**	
8:30am	Vanessa Escobar (SMAP Applications Deputy Coordinator) *(10 min)*	Objectives for Day 2

Local Alaska Community Presentations ***Operational Areas of Interest for Freeze Thaw Data***		
8:40am	Parker Martyn (National Park Services) *(30 min)*	***Remote Sensing in support of the NPS***
9:10am	Katey Walter (University of Alaska Fairbanks) *(15 min)*	***Methane seepage from lakes along boundaries of thawing permafrost and melting glaciers***
9:40am	Kyle McDonald (SMAP Mission) *(15 min)*	***CARVE and SMAP-Carbon Product***
9:55am	Cindy Hamfler (Bureau of Land Management) *(15 min)*	***BLM Land stewardship and remote sensing***
10:15-10:25am	**Morning Break** *Please use this opportunity to fill out survey*	
10:25-10:40am	Andy Mahoney (University of Alaska Fairbanks) *(15 min each)*	***Climate Change and Sea Ice***
10:40-10:55am	John Zufelt (Alaskan Command) *(15 min)*	***Advancing Arctic Domain Awareness***
10:55-11:10am	LCDR Frank Price (USN, Oceanographer of the Navy) *Presentation given virtually (15min)*	***Military operations, navigation and uses for satellite data***
11:10am-12:00pm	**Plenary Session** *SMAP mapping radar, ICESat-2 altimetry for vegetation and sea-ice mapping* *How will SMAP Freeze/Thaw and ICESat2 products for Sea Ice Applications and DOD*	
LUNCH 12:00-1:30pm (Locally)		
1:30pm	Scott Dunbar, JPL *(45min)*	SMAP Data Description
2:15pm	Dara Entekhabi, MIT *(20 min)*	Combining data from multiple missions. Innovative approaches to future research
2:35pm-2:50pm	**Afternoon Break** *Please use this opportunity to fill out survey*	
2:50pm-4:00pm	**Panel Discussion/Audience Discussion** *Open discussion-identify potential collaborations and opportunity* *Action items to move research forward*	
4:00pm	Christine Bonniksen, NASA HQ *(15 min)*	Closing comments
4:15pm-5:30pm	**Tutorial Adjourned** ***Poster Session to be held prior to Social Dinner (Gazebo Room)***	
Social Dinner (location will be announced at meeting) ***Departing from Hotel at 6:00pm***		
Day 3	**Thursday, 20 September 2012**	
8:45am	**Depart from Hotel *(Meet in Lobby for carpooling, travel time 15min)***	
Visit to Permafrost Caves and the Geographical Institute, Museum of the North ***Tour Scheduled for 10am***		