Permafrost and Hydrology Breakout summary

• Discussion leader: Kevin Schaefer
• Rapporteur: Tamlin Pavelsky
Planned Papers:

- ALT & soil moisture based on in situ and radar data (Kevin Schaefer)
- Long-term trend analysis for open water extent (Mark Carroll)
- Relationships between methane flux, soil moisture, and vegetation type (Elyn Humphreys, Oliver Sonnentag)
- Snow synthesis: snow wetness (John Kimball, Peter Kirchner)
- Snow synthesis: rain on snow (John Kimball, Peter Kirchner)
- Snow depth from ArcticDEM differencing (Patrick Burns, Evan Wilcox, Peter Kirchner)
- Relationship between vegetation greenness, snow depth, Wildlife, ALT (Natalie Boylman)
Broader Plans

• Relate ALT data to borehole/ALT data (Kevin Schaefer, Dmitri Nicolsky)
• Beyond the cal-val dataset
  • Thaw depth change over a season
  • Scaling ALT in time
  • What is the uncertainty of a point measurement representing an average?
  • Relationships with landscape units
• Could we use Icebridge data to characterize snow?
  • Action: give Hank mini proposal on how to leverage IceBridge (Tom Douglas)
• Synergy with SnowEx: can we get them to fly Alaska?
  • Action: Recommend SnowEx Alaska flights
Broader Plans

• How to use inundation extent variations to understand connectivity
• Merge AMSR/Passive Microwave with optical data/SAR data
• Link permafrost/carbon questions to permafrost/water
• Relate changes in hydrology to hyperspectral reflectance