# Notes from Final Discussion

By Mike Durand & Eli Deeb

Jared Entin: Were there similarities in the presentations?

- HP: Lots of similarities in the instruments
- Ed: Need more on justification for what campaigns are needed

Jessica: Summarizing the sticky notes and comments

- Most comment was getting data out faster
- Need to do something for sharing of code: a SnowEx Slack channel or equivalent, pre-processing
- More talk on the plan for papers for this upcoming winter
- Miscellaneous
    - There were some questions on global snow
    - How much could you get from a spaceborne lidar with sparse spatiotemporal sampling?
    - Can we correlate our mission with USGS gages?

Jared:

- If someone were to ask you for a proposal for the upcoming three years, would you have the information needed to do that?
- Things that were not included in the three proposals were: Justification for the campaign; and Details of how to implement. Homework between now and AGU is to work on those.
- On justification, ultimately we need things like “Right now power generation is inefficient by 20%, because we don’t know the snow. If we knew the snow, we could improve power generation significantly.”
- We need to get better at informing other communities on what we are doing, such as the Canadians.
- Right now he feels that we are all doing our own things, but need to do a better job at working together.

HP Marshall: We need to do a better job at improving our modeling and bringing the observations into the modeling, building on the OSSE frameworks. Need additional funding for some of those opportunities, relative to the field efforts.

Jared: Some of those efforts are funded by other programs. Agree we need to make sure we have the modeling framework

Anne Nolin: Have formed an informal snow albedo working group. Contact Anne if interested in this group. Plan to write an e.g. *Reviews of Geophysics* or white paper to summarize state of the art, and provide recommendations to Jared.
Anne: When in the process do we need to begin developing an Algorithm Theoretical Basis Document?

Jared: ATBDs are generally required to be due in Phase B of the satellite mission, likely not needed at this point in the process.

Anne: Nonetheless, it is of value to begin sharing the theoretical basis for what we are all working on.

Batu: At this time, may be helpful to define an SATM to identify the trade space.

Jared: If interested, you could go to look at the SMAP L1, L2, L3, and L4 ATBDs. These are linked from NSIDC.

Noah: Are we a snow depth, or SWE, or snow albedo mission? We must have this so that we can guide field activities and determine future direction.

Jared: When we move to write a satellite mission we will need to better define our science basis. E.g. Melissa Wrzesien's work on showing where models are missing mountain snow.

Xubin Zeng (Arizona): It would be helpful to distribute the stoplight chart, and to see more at these meetings whether we're making progress on these concepts.

Carrie Vuyovich: Will update and distribute table.

Jared: In part need to go through the exercise to better define the science so that we can better determine what sensor skillset (e.g. mountains vs shallow snow) is necessary. It's a two body problem.

Mark Flanner: How important is it that our science questions fall into either the water resources or climate change.

Jared: In part we will refine this in the next couple of years. Also this relates to a question he has thought of: What does my snow satellite do in the next couple of years? This also relates to whether we are focused on science or applications. E.g. how to evaluate higher spatial resolution or lower latency.

Ed Kim: Note that snow mass is in the Explorer category of the Decadal Survey. We are in competition with the other concept missions. Selection may well come down to whether we can be convincing that we will deliver data products with the right accuracy. On details, see Ed's list of strawman questions in the handout from today.

Dorothy Hall: Send to Dorothy all notes from rapporteurs from each of the breakout sessions today.