

US Plans moving forward

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Next steps

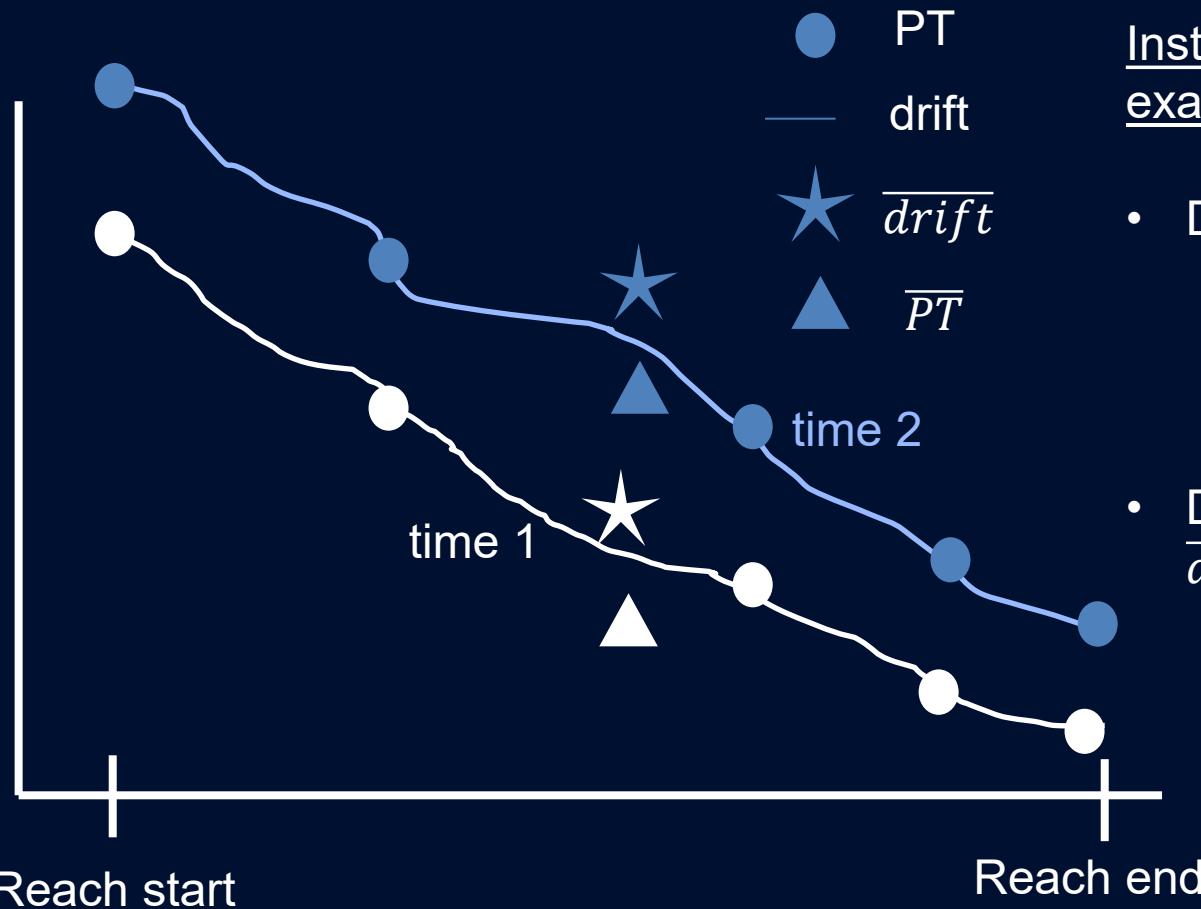
- Collect more field data
 - Tahoe, WM, CT, NS
 - Probably Yukon Flats, Everglades, Mississippi before validation meeting
 - Pending results
 - Scaled down Northern Swing next summer
- Question assumptions and formalize errors
- Validation meeting
- Community validation

Question assumptions and formalize errors

We have many thresholds/assumptions built into the code:

- How close is close enough to SWOT in space?
 - How close is close enough to SWOT in time?
 - How much GNSS error is acceptable?
 - How much PT error is acceptable?
 - How much PT settling is acceptable?
 - Does the fast sampling data match the science orbit data?
 - Should we go 'wide' or 'deep' in our field data collection?
 - How does manual measurement vary from operator to operator?
 - How large a buffer do we draw around bridges/powerlines?
 - Do different copies of the same instrument have the same performance?
 - How does boat speed influence instrument stability?
 - How many 'pings' is enough to calculate the GNSS-PT wse correction factor?
 - How does pixel size influence area estimation?
 - And many more
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- We need to formally test all of these and characterize performance

Question assumptions and formalize errors



Instrument intercomparison example

- Does $\overline{PT}(t_1) = \overline{drift}(t_2)$?
 - No
- Does $\overline{PT}(t_1) - \overline{PT}(t_2) = \overline{drift}(t_1) - \overline{drift}(t_2)$?
 - It better!

Formal Fine Validation

We must assess SWOT performance against the SRD:

- River SP Reach Slope ($17\mu\text{rad}$)
- River SP Reach Relative WSE change (10cm)
- Lake products led by CNES

We need to control for SWORD errors

- SWORD can contribute to major mismatches with field observations
- Formal validation is against what SWOT would produce if it measured height perfectly

Validation meeting will formally accept/reject performance on these products

Community Validation

- After the validation meeting, publish protocols and help investigators with their own validation work
- Collect and compare field data from many teams
- Share experience and help design field collections
- Open source code that transforms field data to SWORD products
 - https://github.com/cjgleason/calval_toolbox

Takeaways

- We are where we think we should be
 - Data flow is good
 - Field data standards holding up
 - JPL/ST integration is very good
- Coarse validation going well
- Fine validation to begin soon with reprocessed SWOT data
- Moving to community phase after the validation meeting