Jet Propulsion Laboratory
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Evaluating a CONUS-wide disALEXI Evapotranspiration product

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Motivation

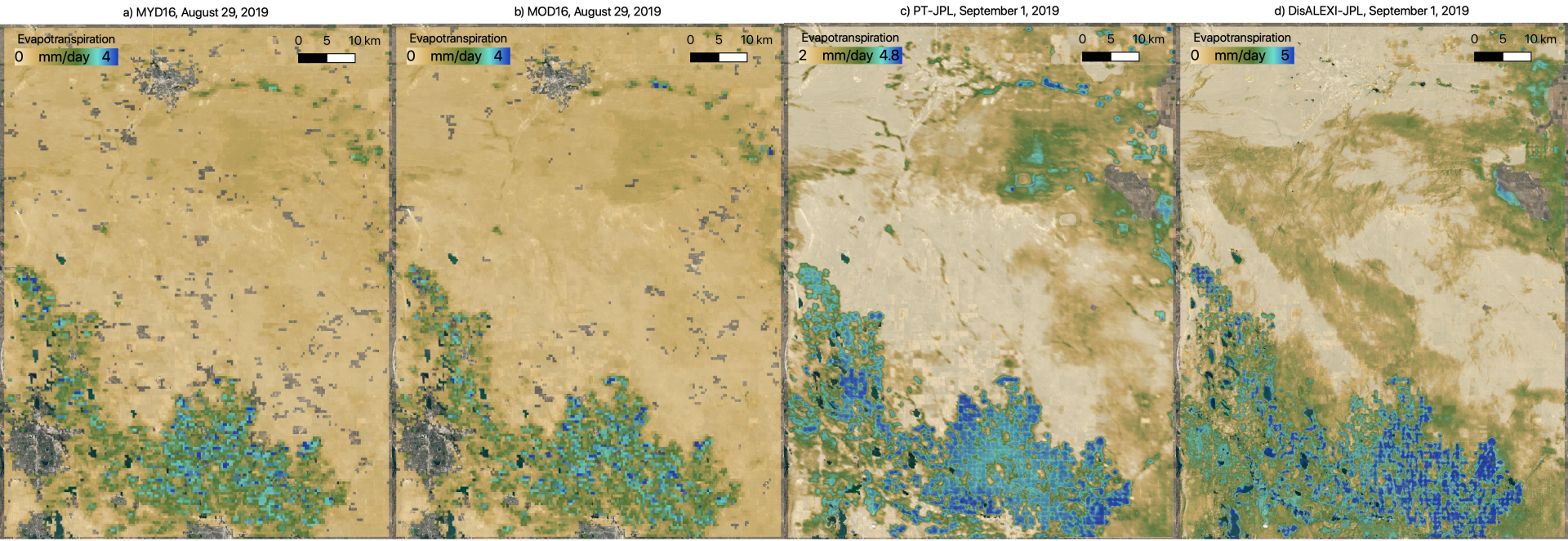
- DisALEXI was developed at the USDA
- Takes advantage of LST changes throughout the morning (GOES)
- Highly sensitive to LST
- Well validated over original target sites
- Enable community members to better measure agricultural water consumptive use over CONUS

Objectives

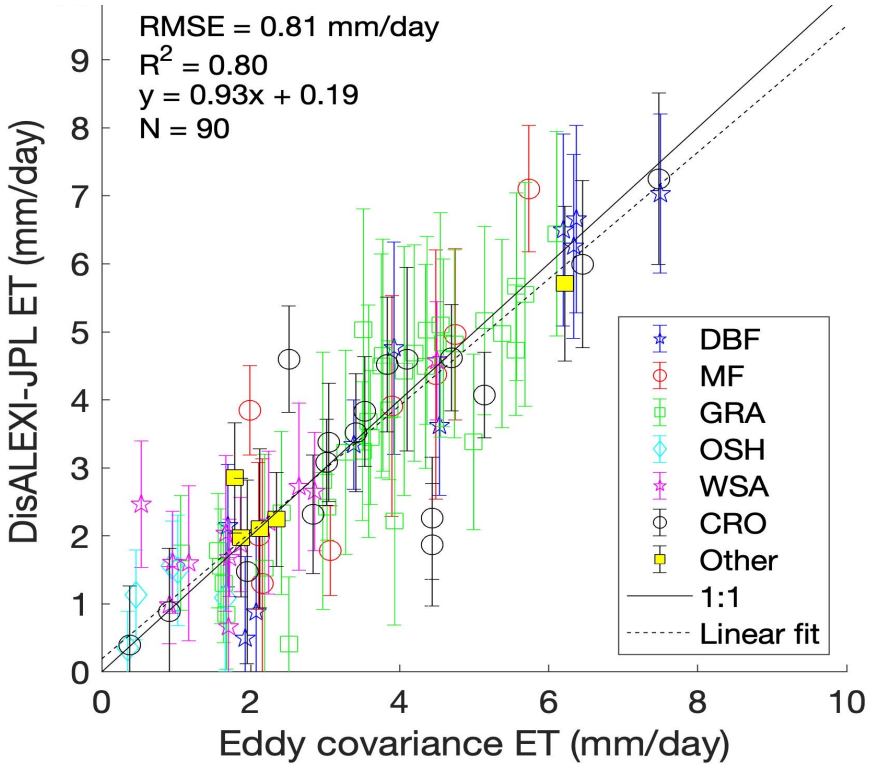
Our main goal is to **develop, validate and evaluate disALEXI ET products throughout CONUS**.

1. Develop a 70m resolution disALEXI ET product for the entire CONUS.
2. Evaluate the current disALEXI algorithm over agricultural field validation sites.
3. Modify the algorithm if needed, especially over regions not covered by the current implementation.
4. Include an appropriate uncertainty quantification, based on leveraged existing research.
5. Make the data publicly available through LP DAAC.

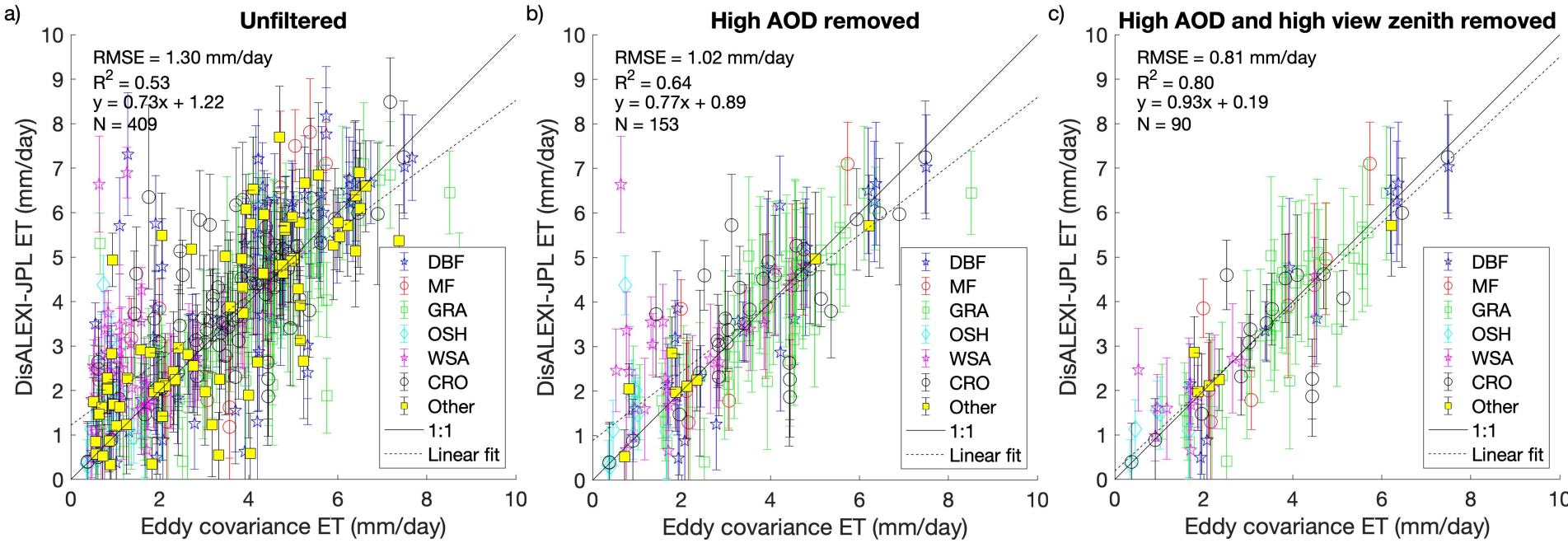
Data is being produced!



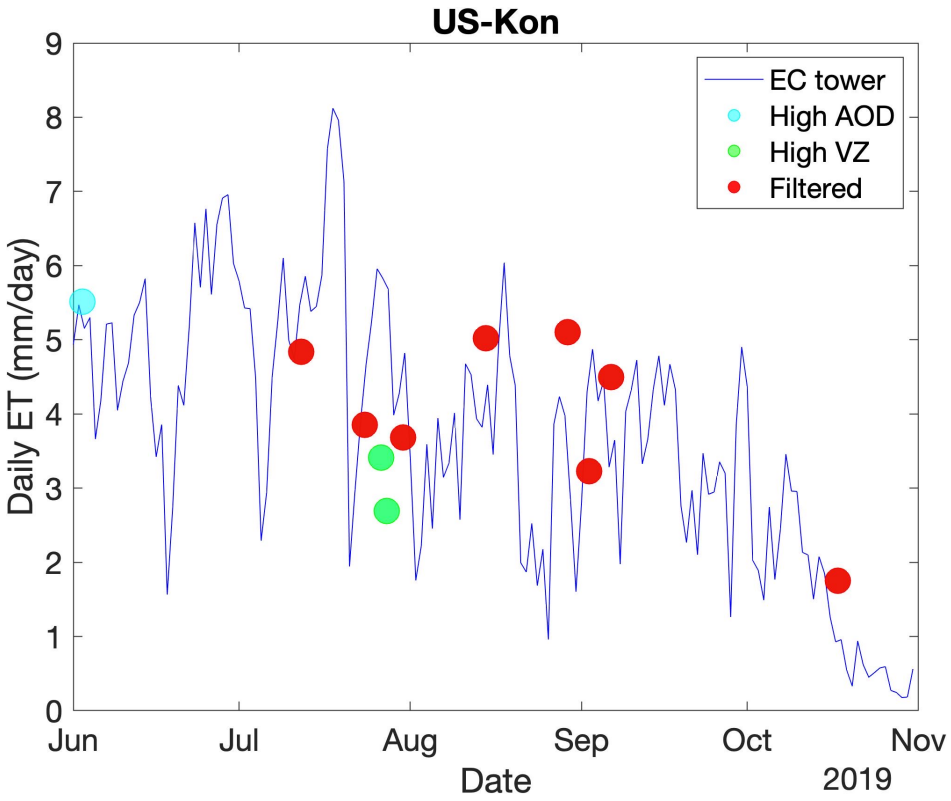
Validation with RMSE < 1mm/day!

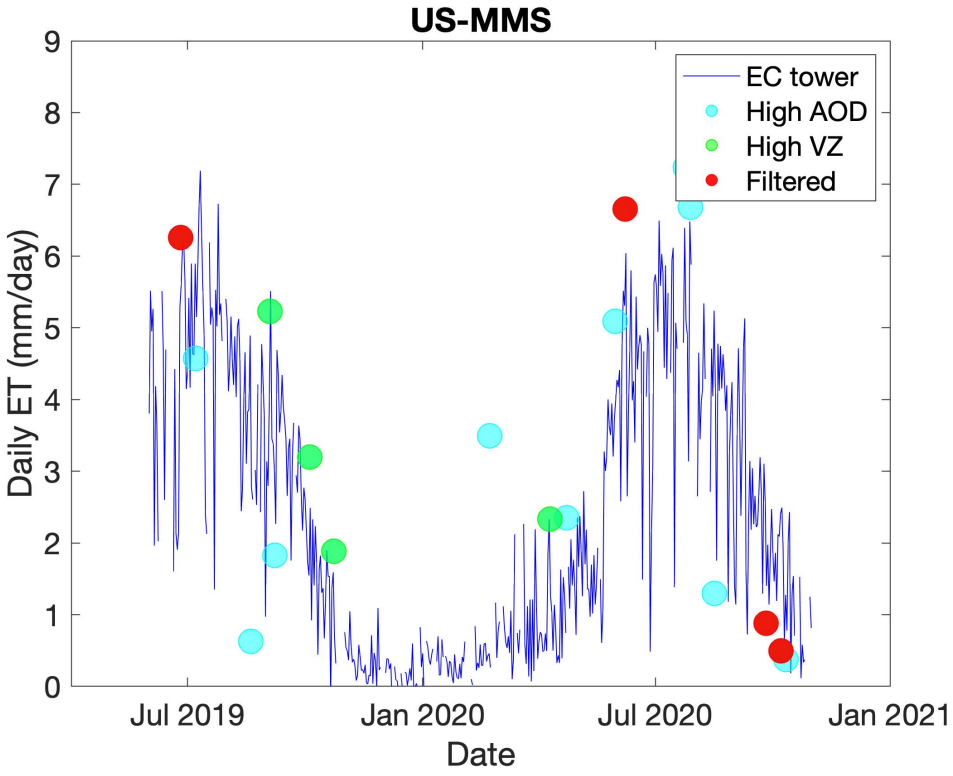


Impact of AOD and view zenith

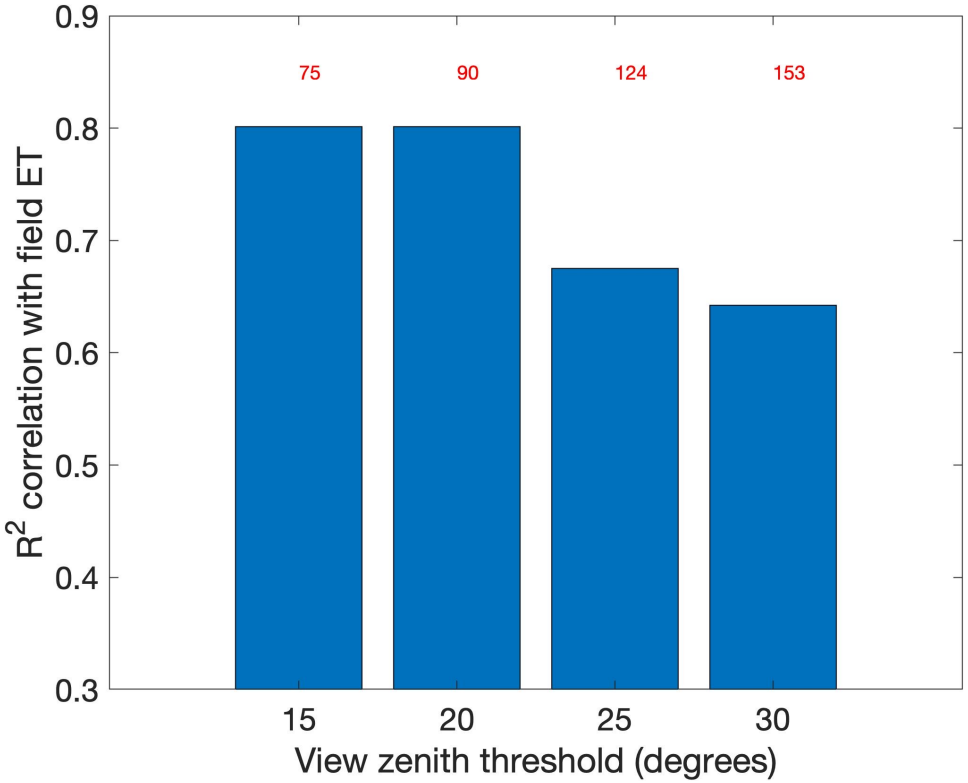


Comparison with eddy covariance sites





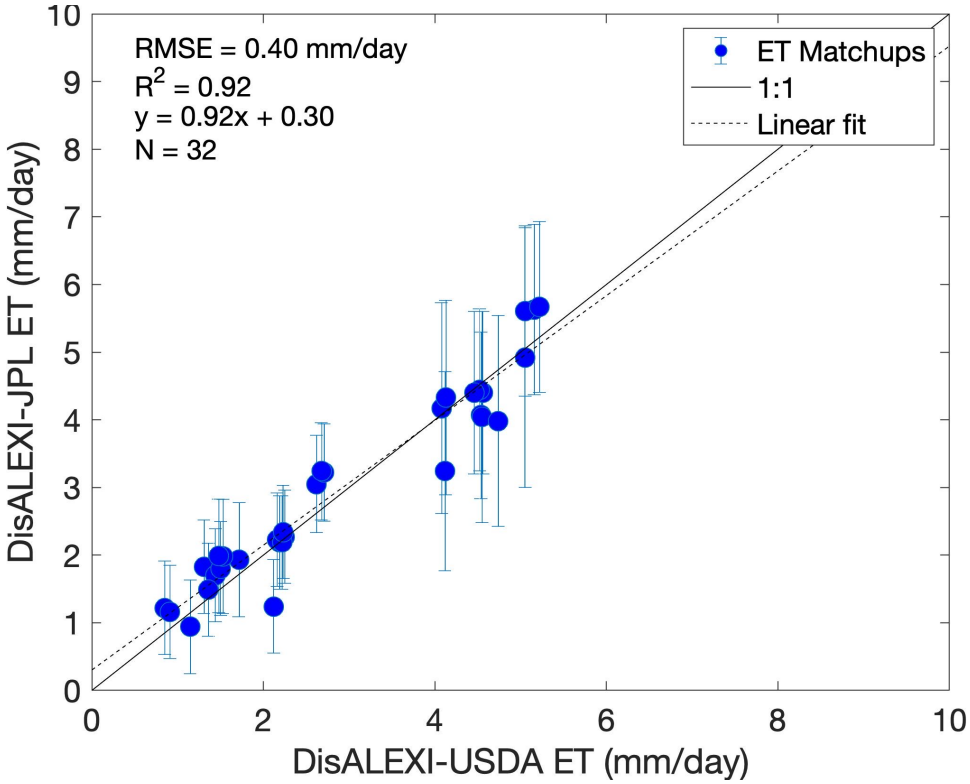
Impact of view zenith



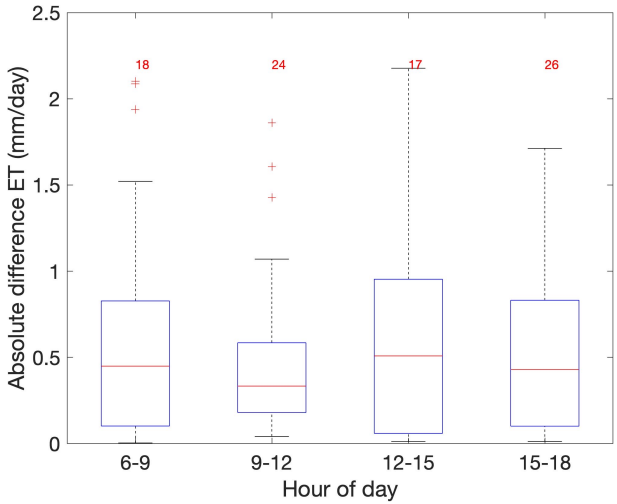
Comparison with DisALEXI-USDA

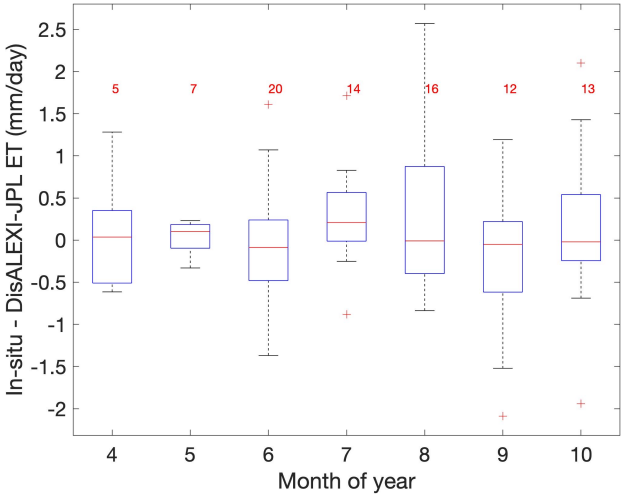
- Needed faster implementation
- Original ECOSTRESS spatial resolution
- Latest Landsat overpass
- Fast LAI estimate

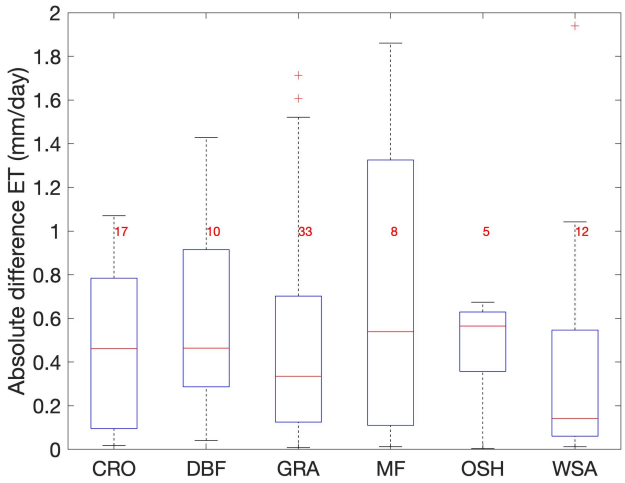
Comparison with DisALEXI-USDA



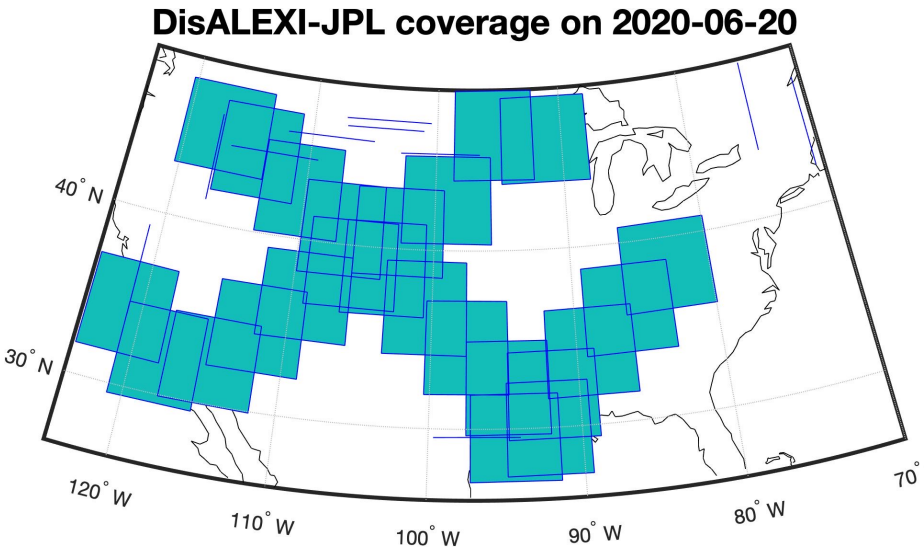
Seasonality, hour of acquisition, and landcover type

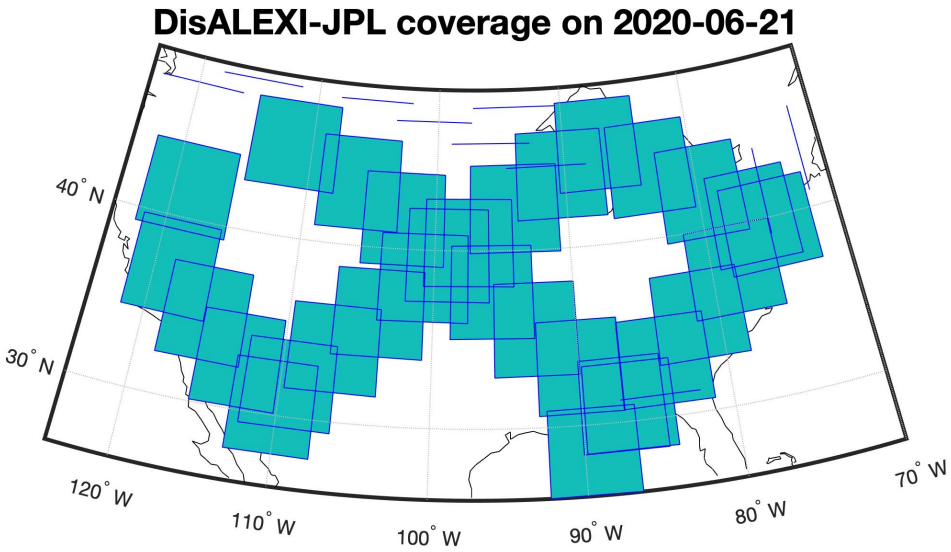






Some facts about the ECOSTRESS orbit





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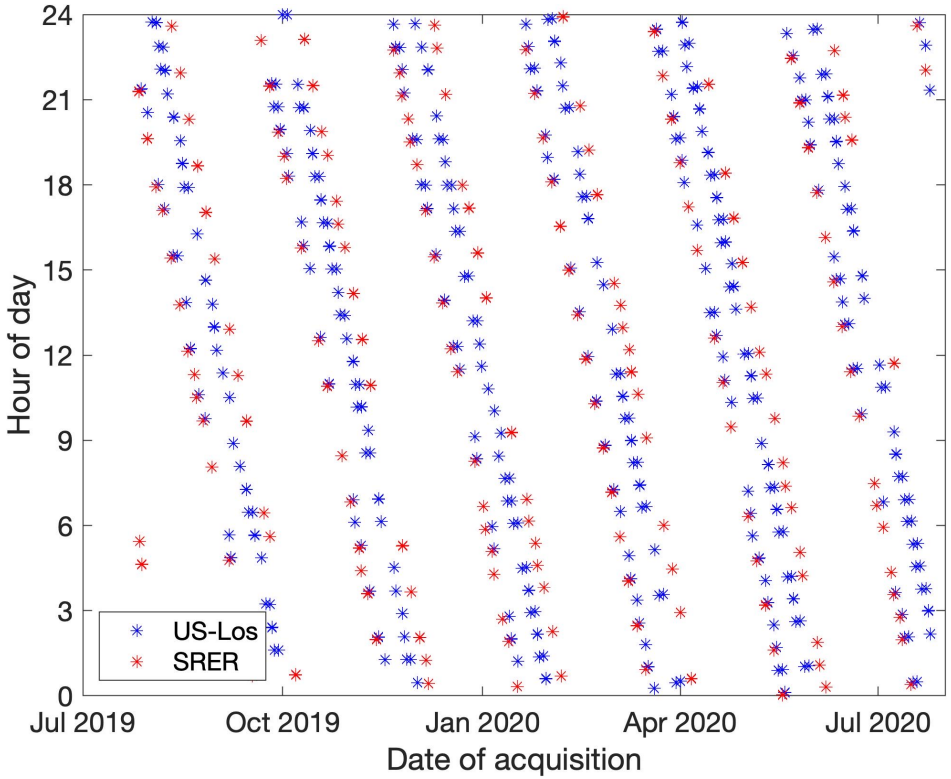
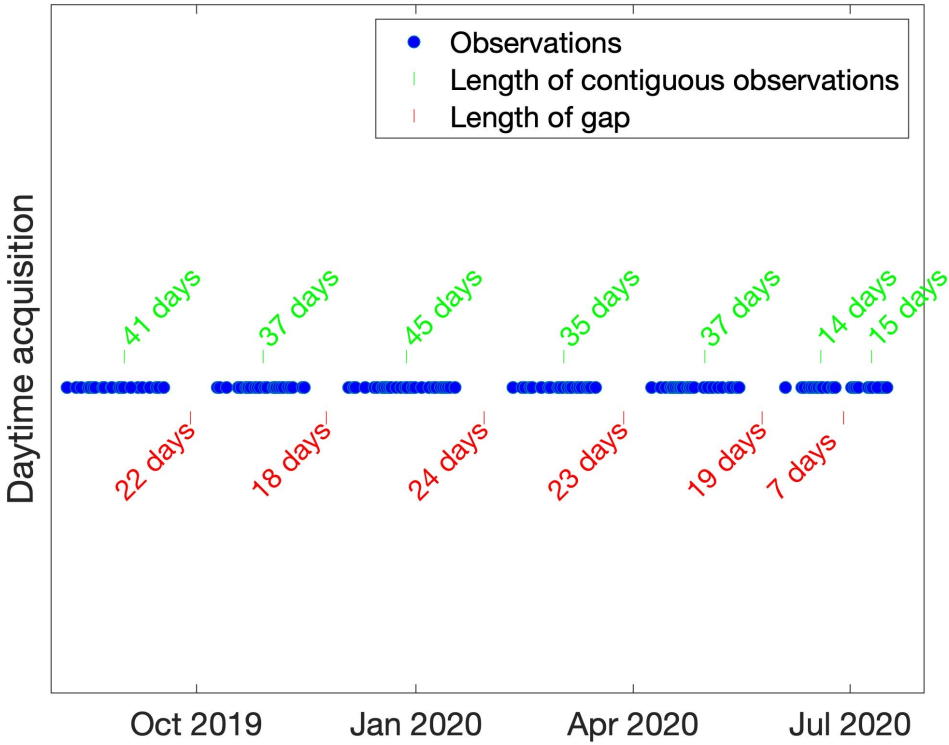
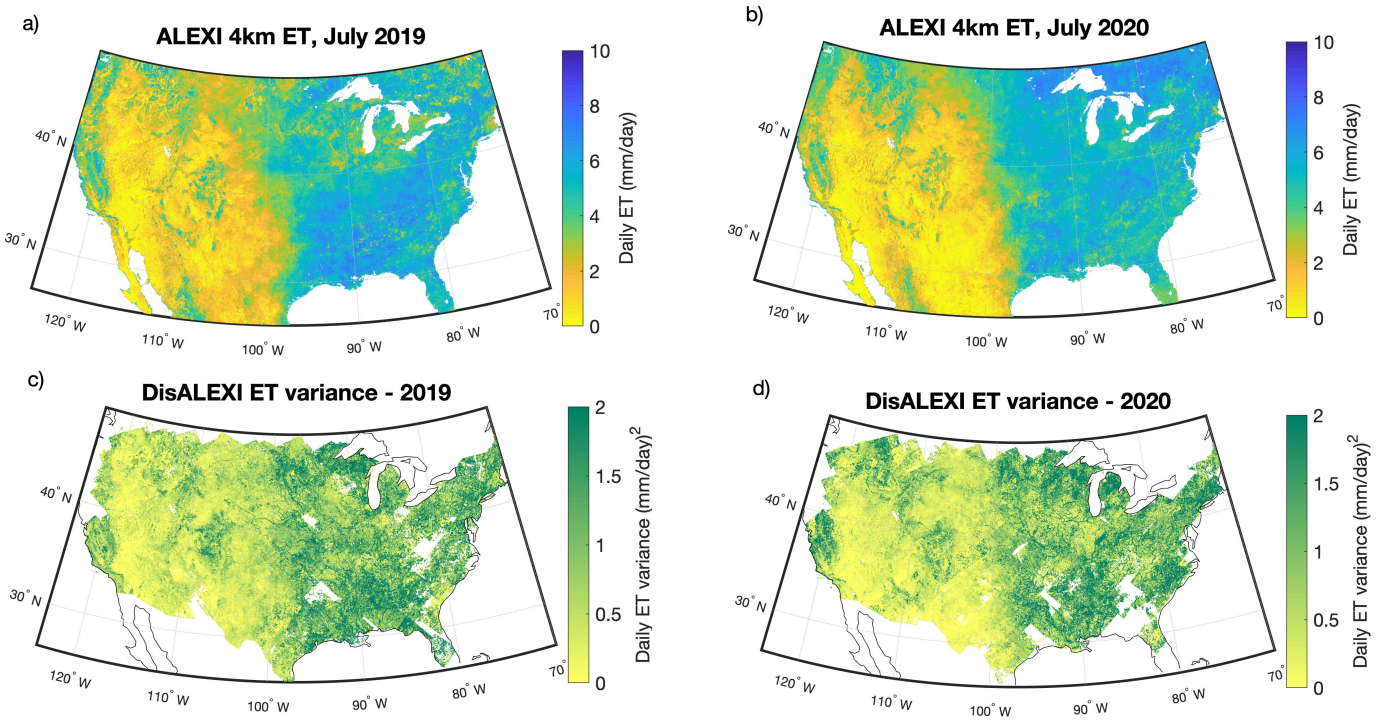
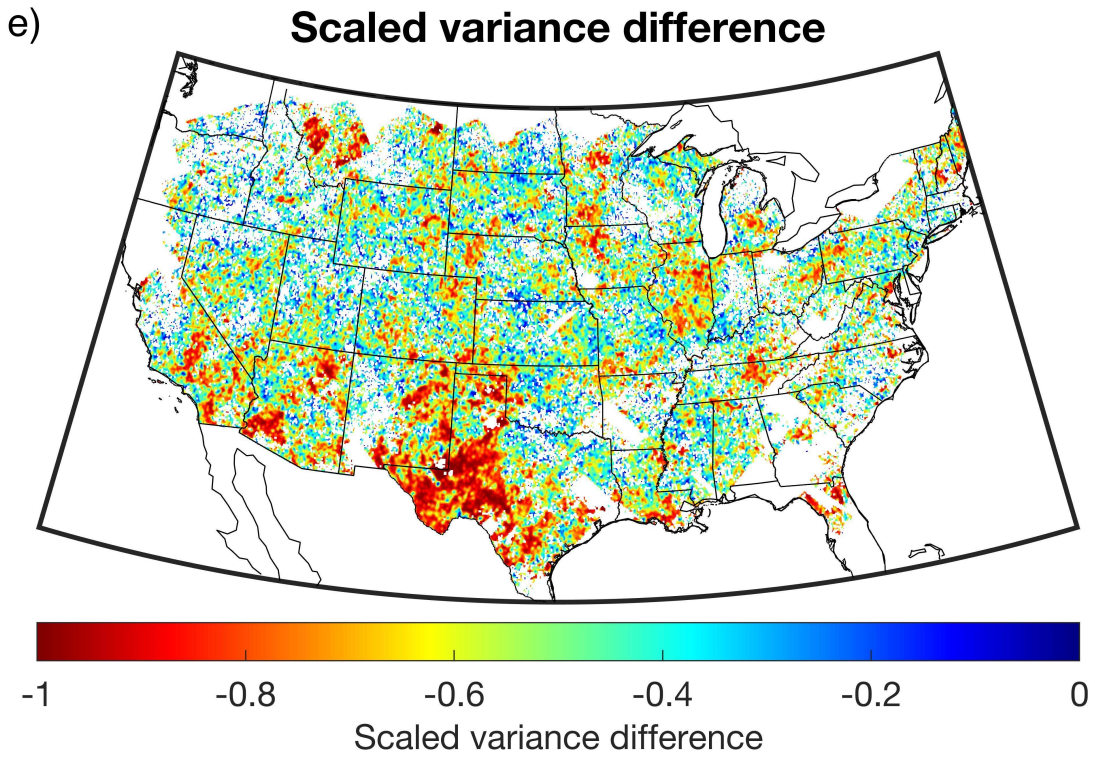




High-resolution ET in a regional context



High-resolution ET in a global context



Next steps

- Improved VSWIR inputs using STARS
- Updated ALEXI input for better performance over forests
- Rugged terrain flag/mask

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