



Mo' Data Sno' Problem

Weekly Update

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MVP - Streamlit Storyboard

Visualizations

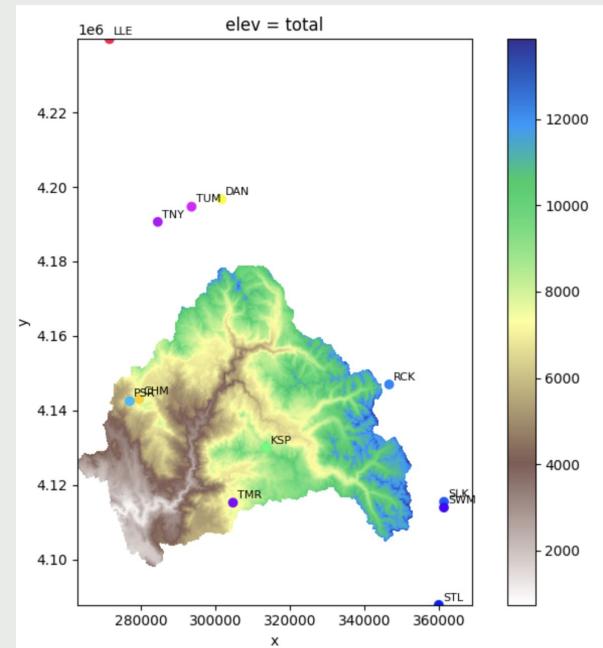
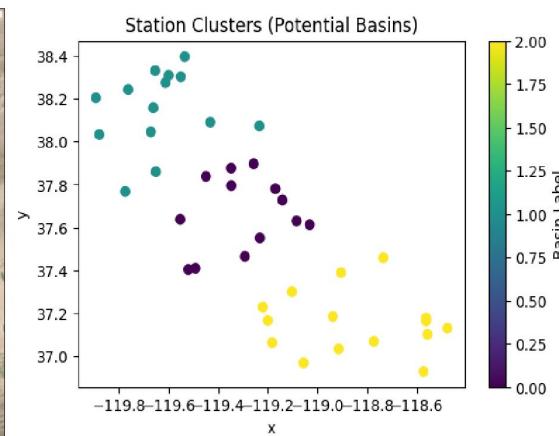
- Snow Pillow/Features
 - Time Series Line Chart
 - Snow Pillow Distribution Map
- Best Fit and Validation (Predicted vs Actual Comparison)
- Feature Coefficient Chart
- Prediction Time Series Chart with ASO flights

Contextual Information Walkthrough

- Water Cycle Visual - Diagram
- California Drought Visualization - Line Chart
- API instructions

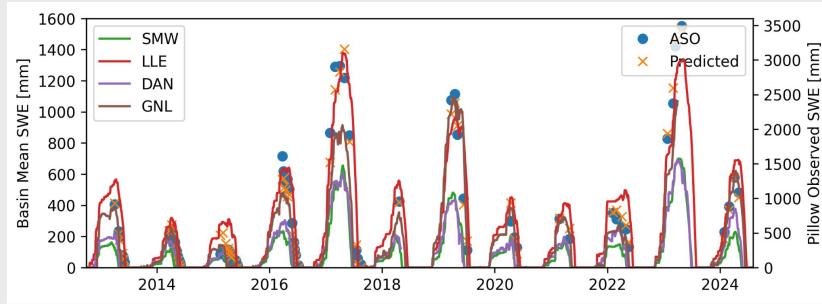
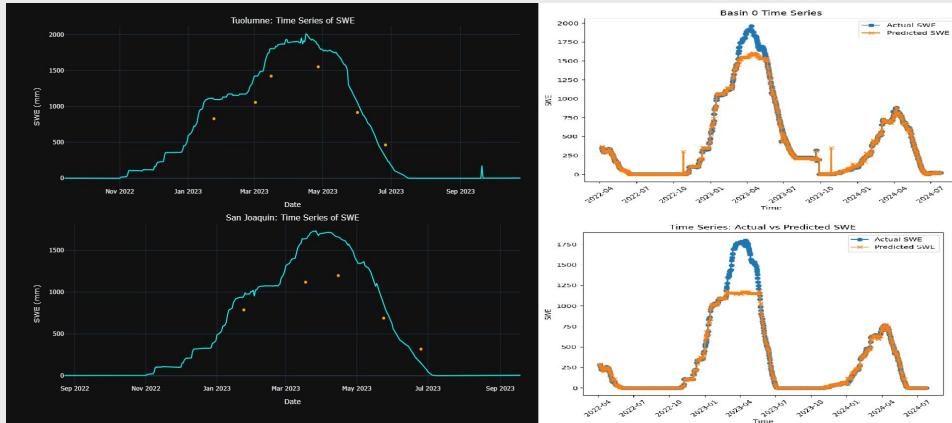
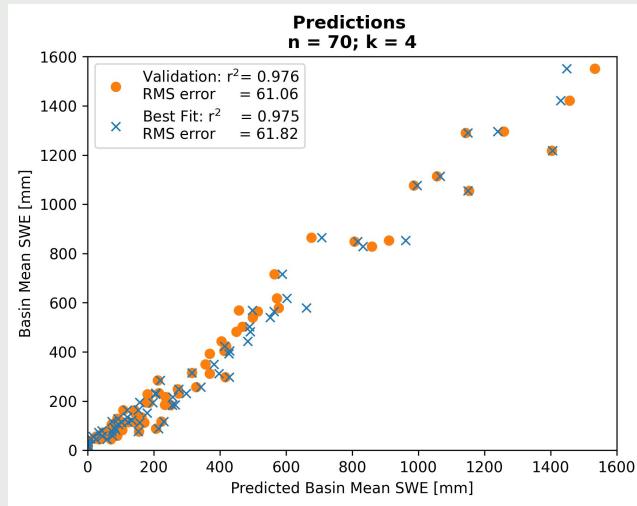
Boundary Visuals

- Basin Coordinate Scatter Plot
- Snow Pillow Time Series



Prediction Visuals

- Plot Results - Time Series
- Summary Data



Features

Select counties of interest

Yolo ✕ Solano ✕ Sacramento ✕

Current situation of COVID-19 cases in Yolo, Solano, Sacramento counties (2025-03-16)

(A) Weekly rolling mean of incidence per 100K

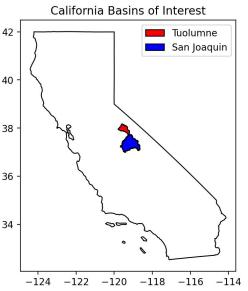
(B) Daily incidence (new cases)

In [283]: `fitted_model.summary()`
executed in 38ms, finished 16:05:54 2020-01-12

Out[283]: OLS Regression Results

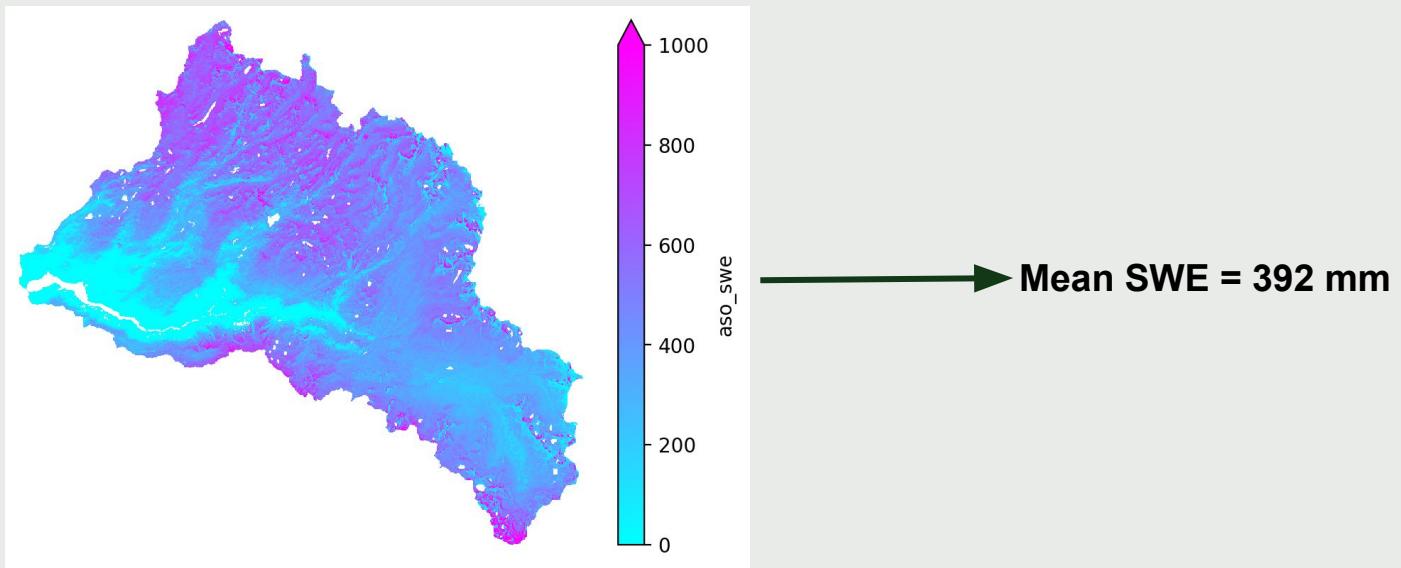
Dep. Variable:	y	R-squared:	0.795
Model:	OLS	Adj. R-squared:	0.725
Method:	Least Squares	F-statistic:	11.41
Date:	Sun, 12 Jan 2020	Prob (F-statistic):	3.29e-11
Time:	16:05:54	Log-Likelihood:	198.87
No. Observations:	64	AIC:	-363.7
Df Residuals:	47	BIC:	-327.0
Df Model:	16		
Covariance Type:	nonrobust		

	coef	std err	t	P> t	[0.025	0.975]
const	0.1291	9.87e-05	1308.848	0.000	0.129	0.129
x1	0.0047	0.002	2.958	0.005	0.001	0.008
x2	0.0059	0.002	3.721	0.001	0.003	0.009
x3	-0.0080	0.002	-5.077	0.000	-0.011	-0.005
x4	0.0071	0.002	4.470	0.000	0.004	0.010
x5	-0.0050	0.002	-3.156	0.003	-0.008	-0.002
x6	0.0042	0.002	2.635	0.011	0.001	0.007
x7	0.0040	0.002	2.535	0.015	0.001	0.007
x8	0.0048	0.002	3.043	0.004	0.002	0.008
x9	-0.0051	0.002	-3.202	0.002	-0.008	-0.002
x10	0.1291	9.87e-05	1308.848	0.000	0.129	0.129
x11	-0.0010	0.000	-2.628	0.012	-0.002	-0.000
x12	0.1291	9.87e-05	1308.848	0.000	0.129	0.129
x13	-0.0010	0.000	-2.628	0.012	-0.002	-0.000



Goal 1: Predict basin mean snow-water equivalent (SWE)

Labels: ASO Mean SWE



Agenda

Purpose: Assess our model's performance and evaluating accuracy

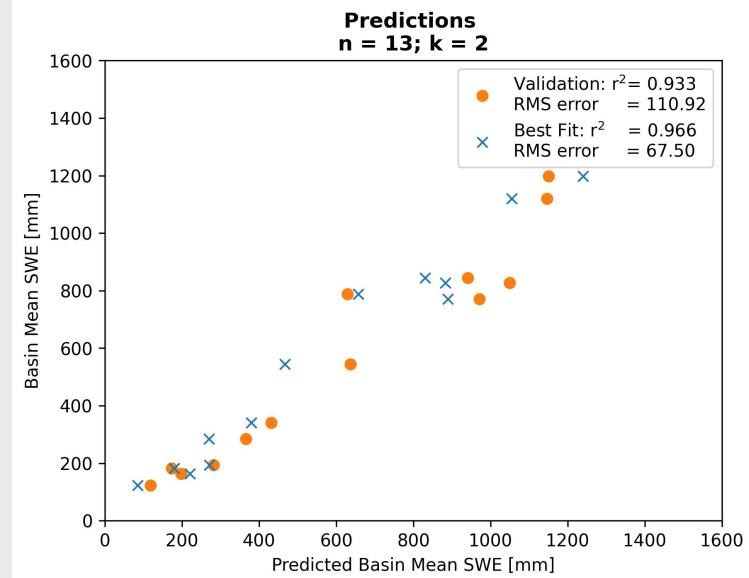
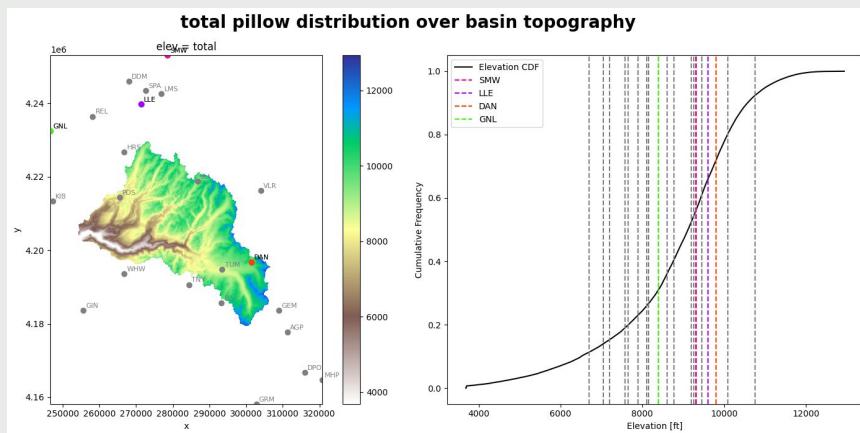
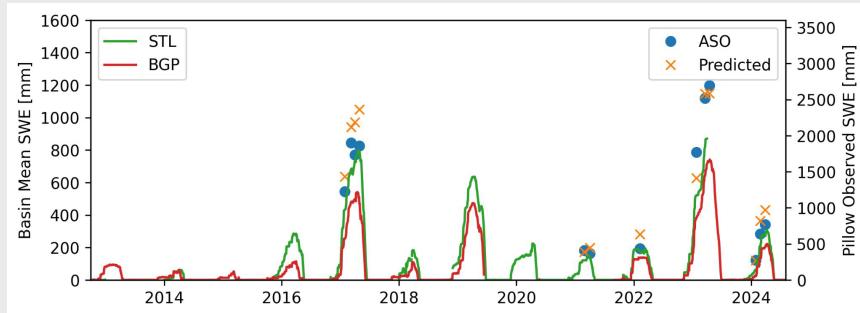
What we did:

- Baseline Evaluation
- Model Evaluation
- Competitor Comparisons
- Imputation Strategy

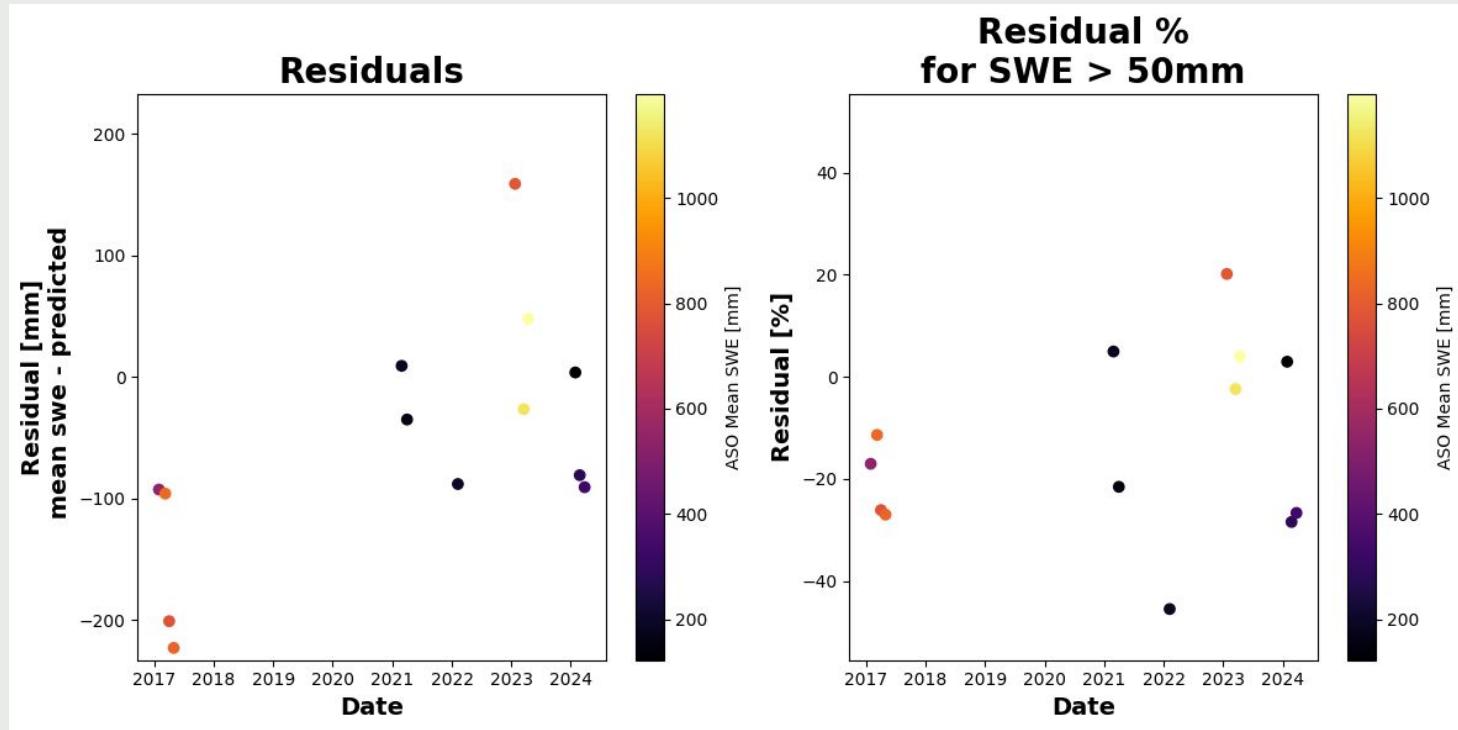
Next steps

- Continued Validation
 - Drafting Report
 - Stakeholder Interview
-

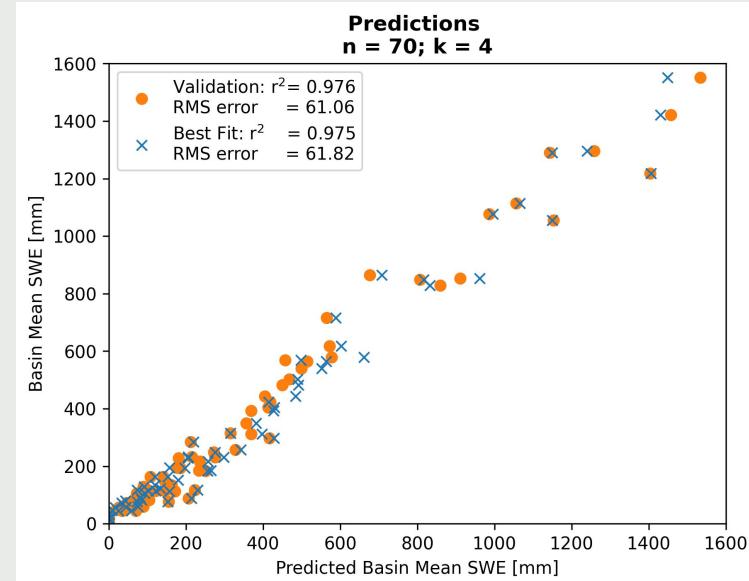
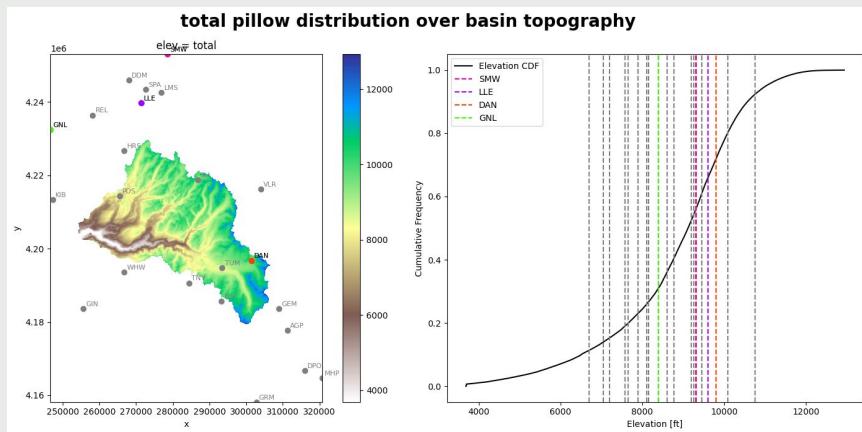
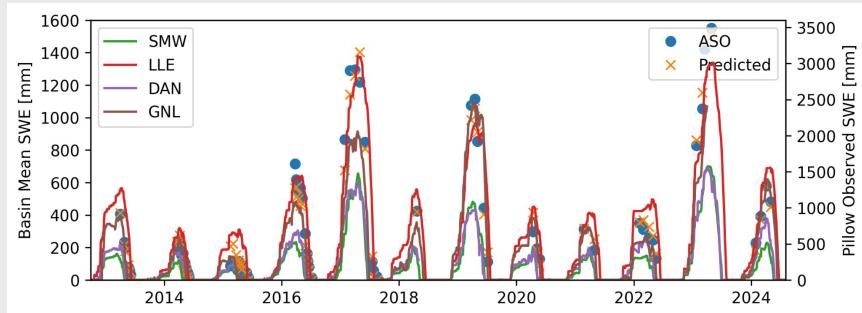
Baseline Model Evaluation



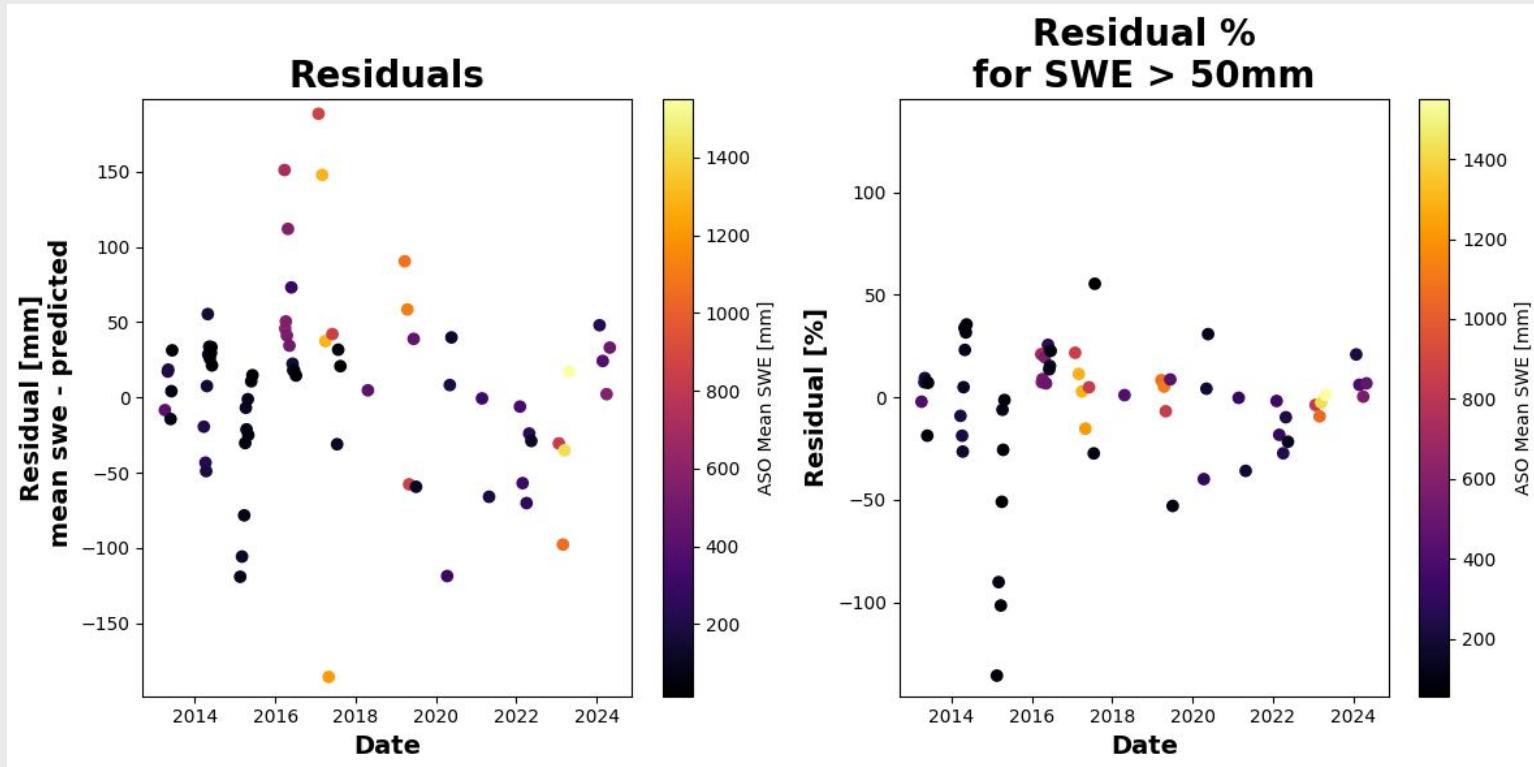
Residuals



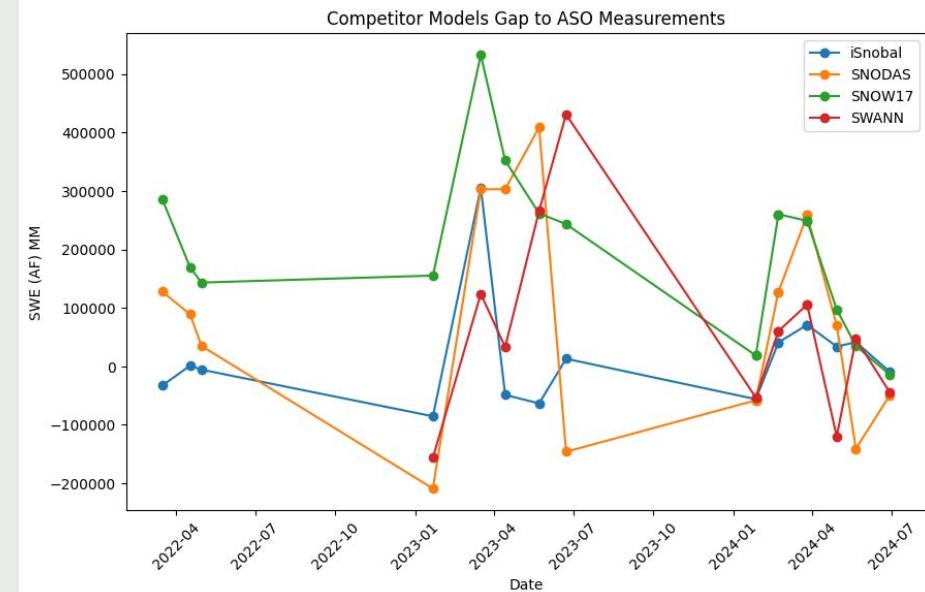
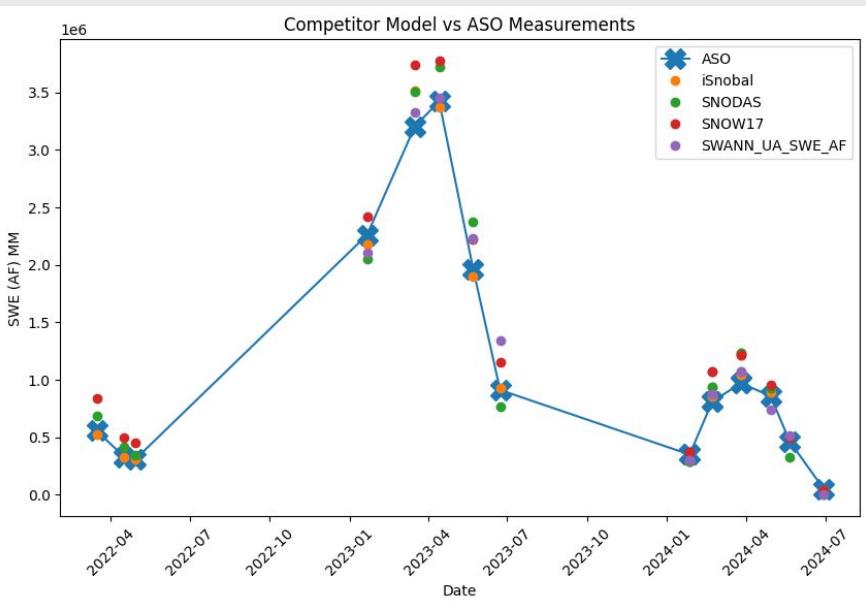
Baseline Model Evaluation



Residuals



Competitor



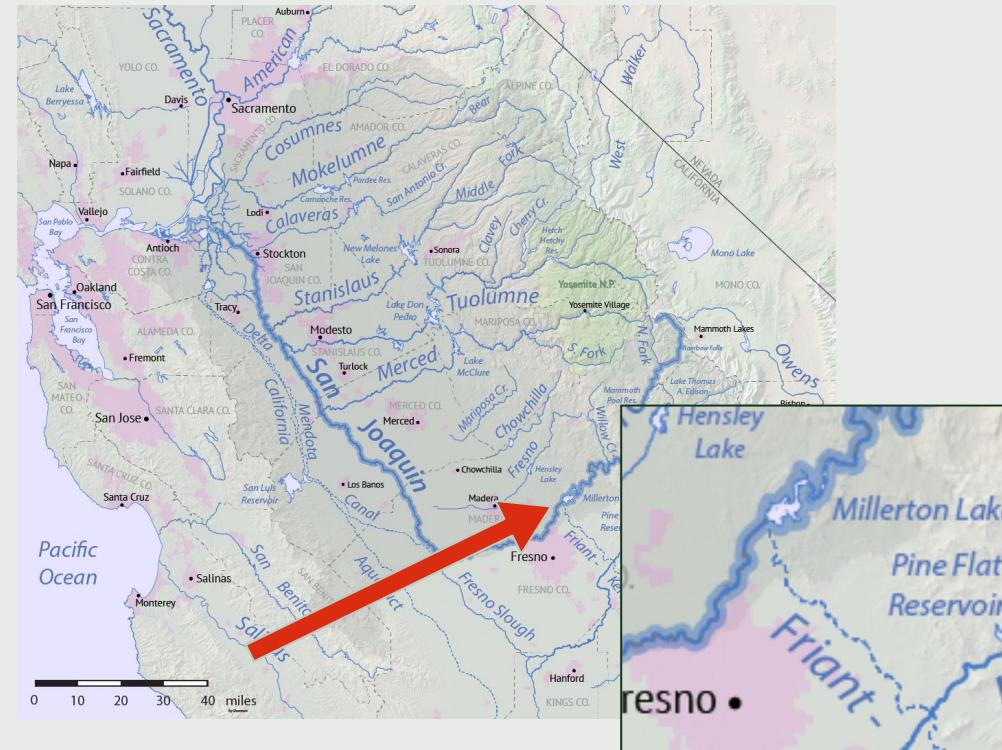
Competitor

	Model	RMSE	R2
0	OURMODEL_AF	313479.00	0.933
1	ISNOBAL_M3WORKS_SWE_AF	93056.34	0.992
2	SNODAS_SWE_AF	199130.11	0.964
3	SNOW17_SWE_AF	243724.69	0.947
4	SWANN_UA_SWE_AF	174165.49	0.979

Real World

	Model	RMSE	R2
0	OURMODEL_AF	313479.00	0.933
1	ISNOBAL_M3WORKS_SWE_AF	93056.34	0.992
2	SNODAS_SWE_AF	199130.11	0.964
3	SNOW17_SWE_AF	243724.69	0.947
4	SWANN_UA_SWE_AF	174165.49	0.979

Friant Dam
~520,000 acre-feet capacity



Imputation

- DB scans
- Address overfitting
- Differences in imputations across datasets

Interview

- Use of data
- Challenges
- Financial and coordination issues

Questions
