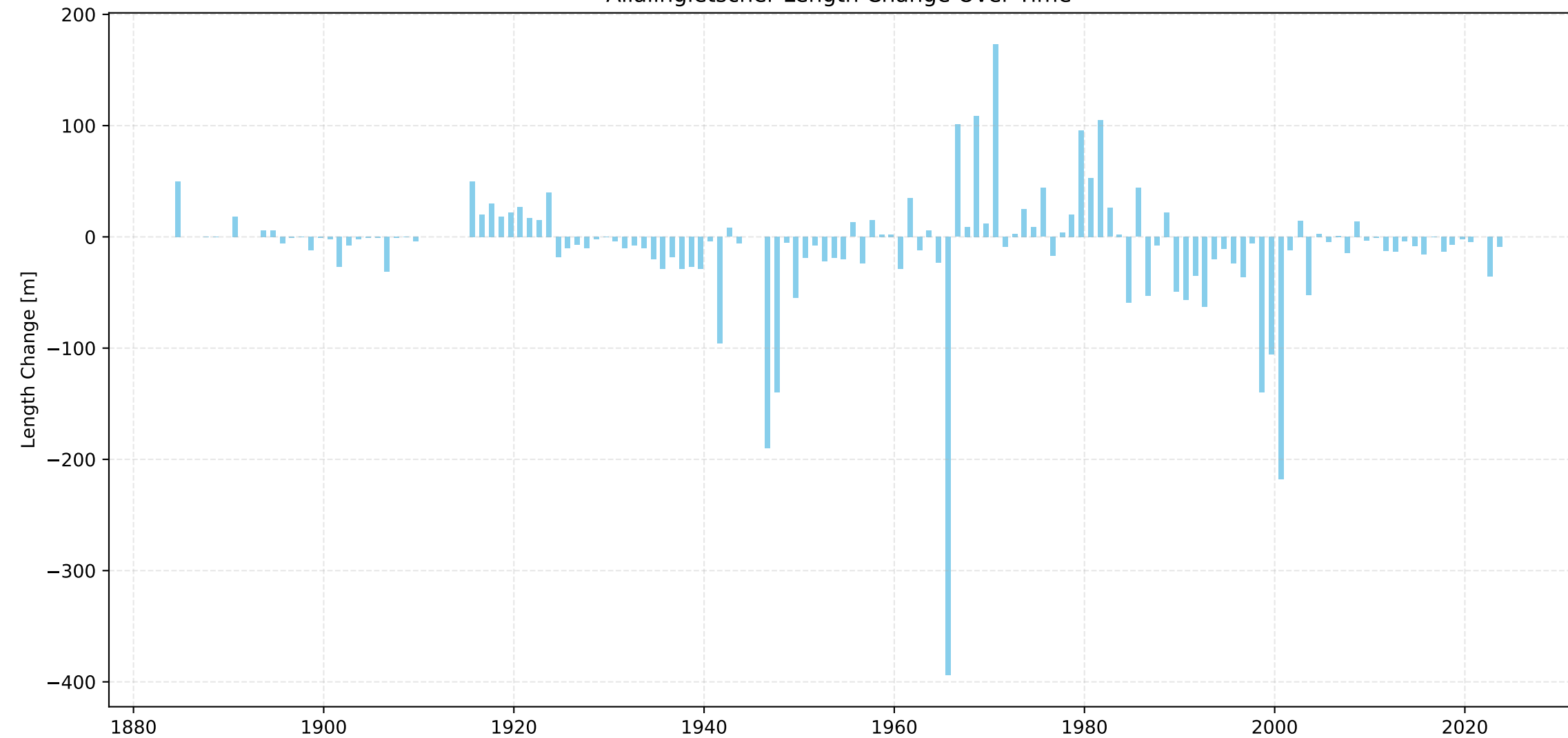
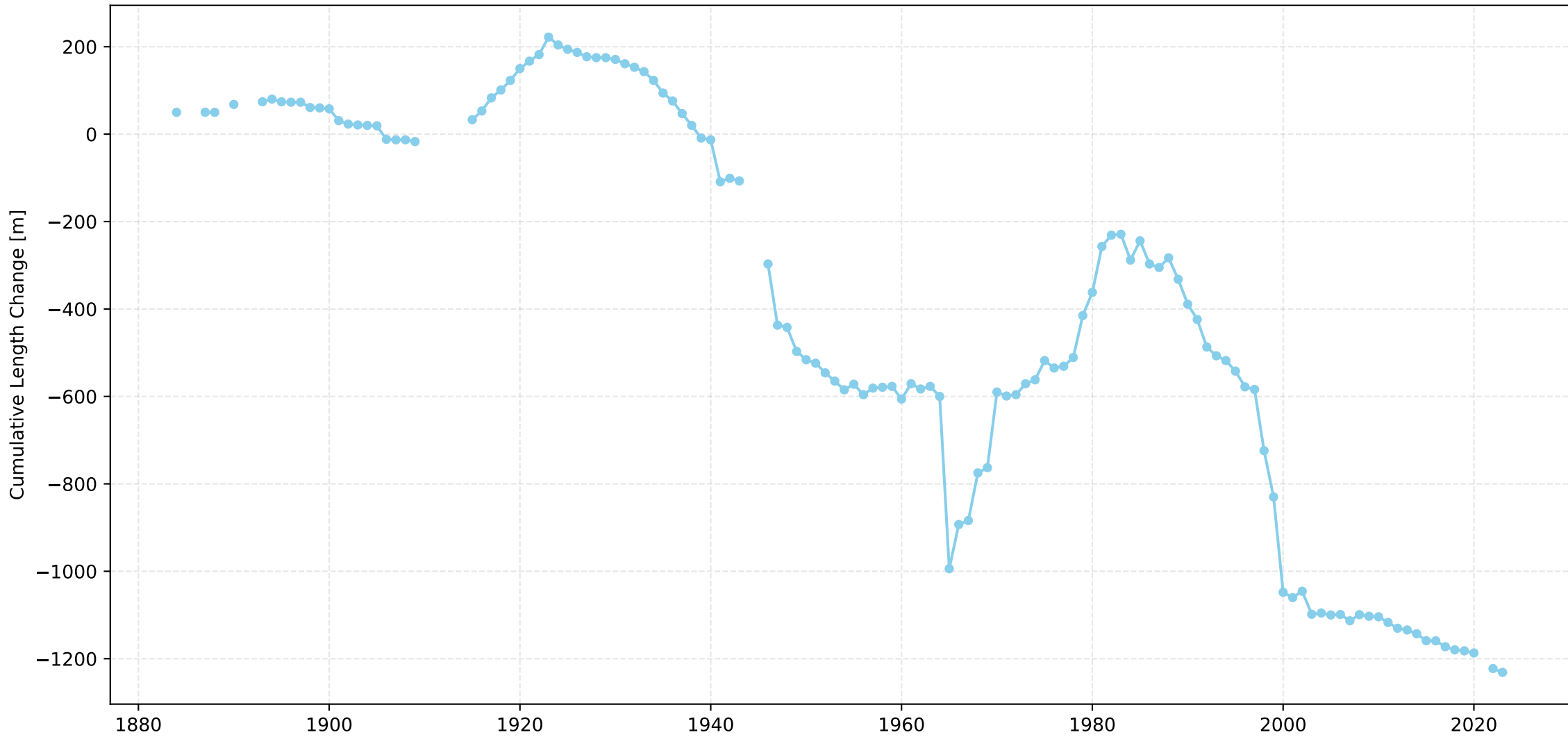


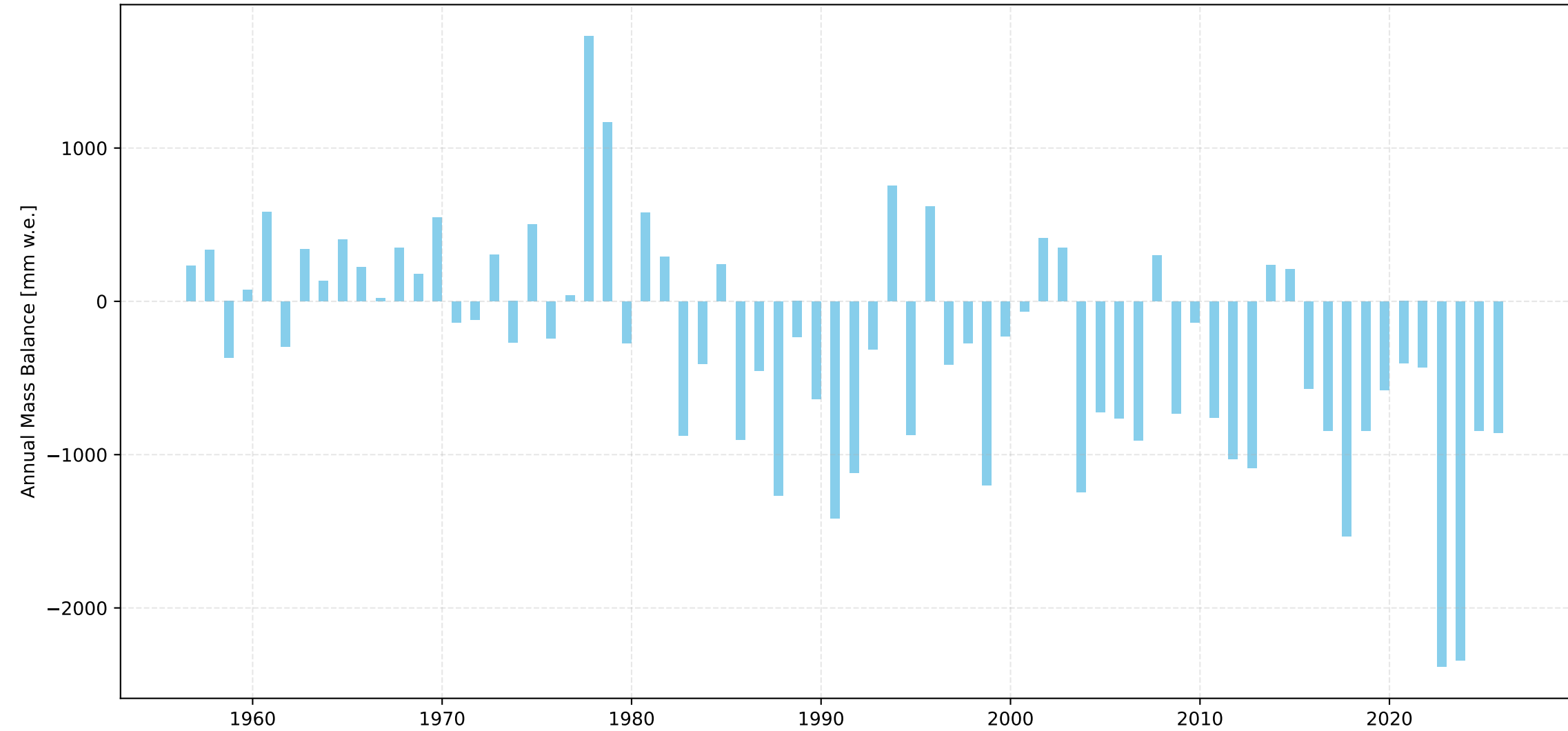
Allalingletscher Length Change Over Time



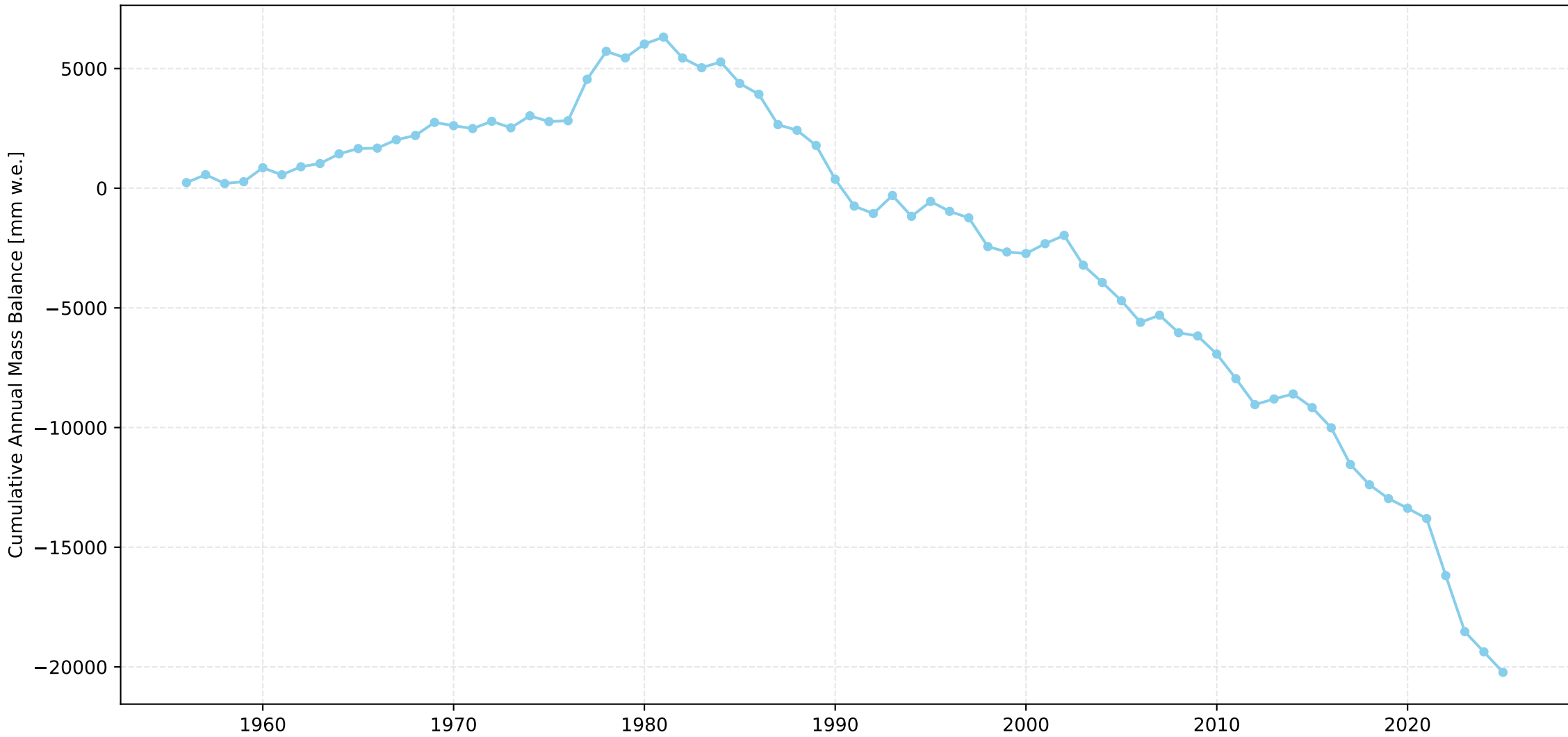
Allalingletscher Cumulative Length Change Over Time



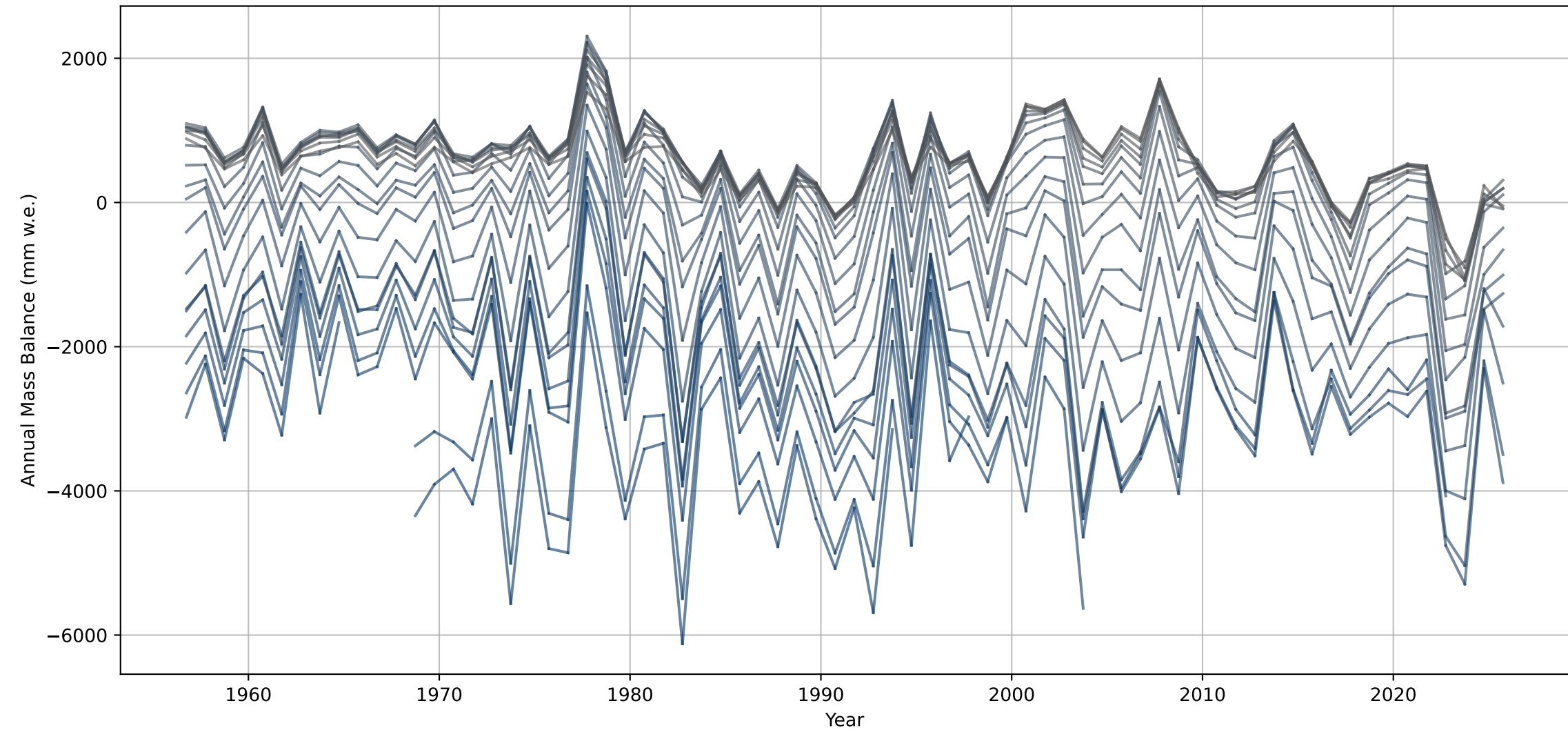
Allalingletscher Annual Mass Balance Over Time



Allalingletscher Cumulative Annual Mass Balance Over Time



Annual Mass Balance for each Elevation Bin over Time - Allalingletscher



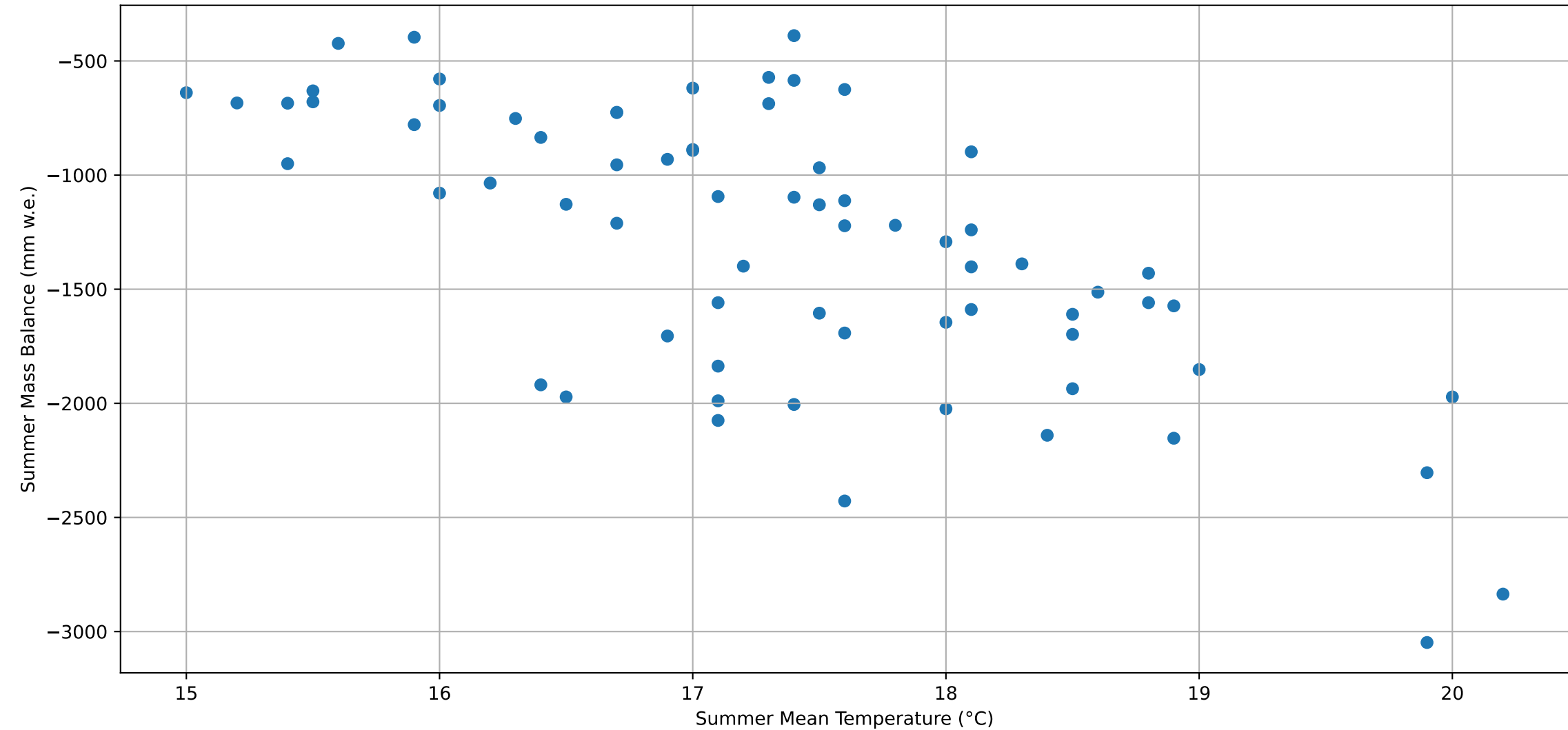
Sion Summer Mean Temperature



Sion Winter Total Precipitation

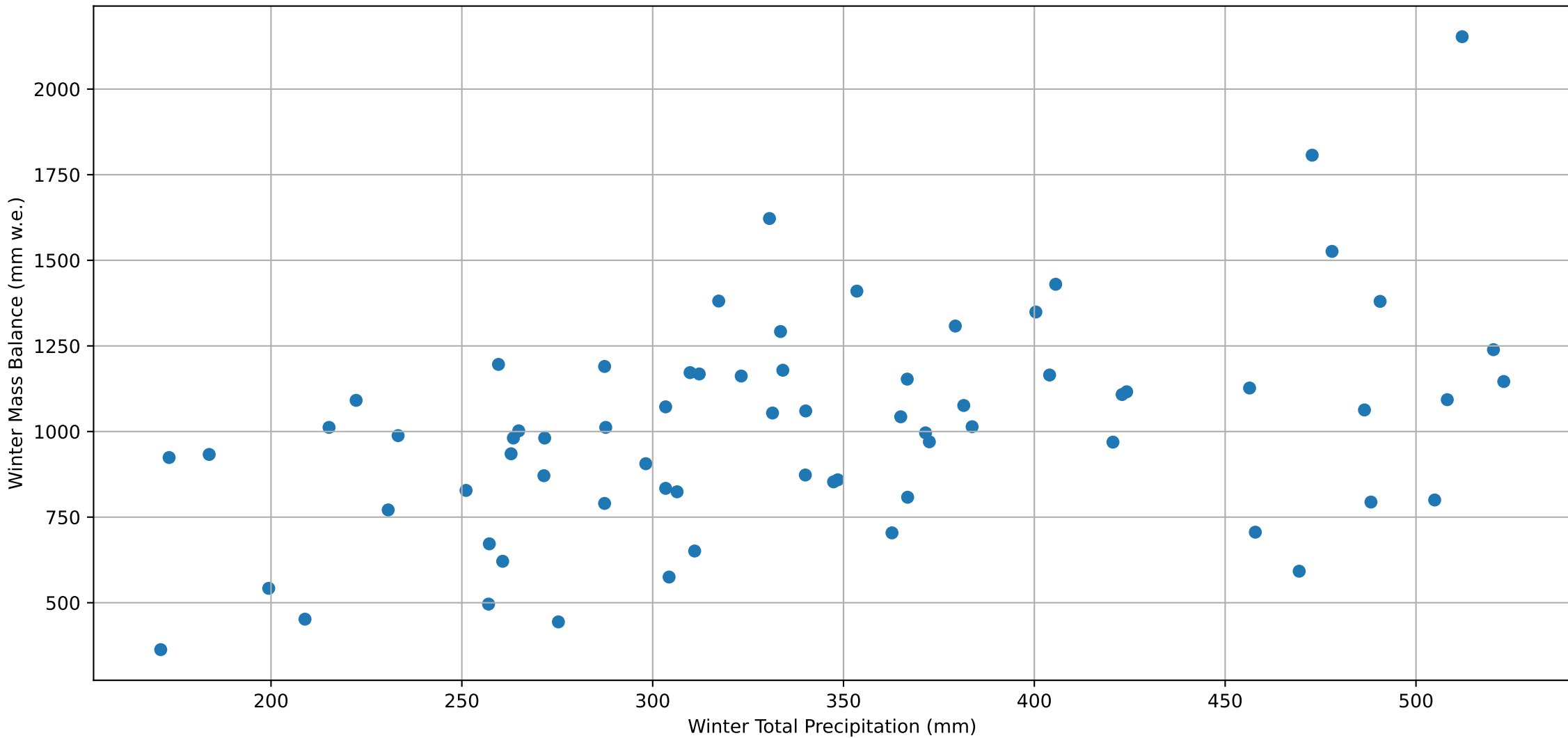


Allalingletscher Summer Mass Balance with relation to Temperature





Allalingletscher Winter Mass Balance with relation to Precipitation



Regression: Monthly 1961-1990

=====
MONTHLY DEVIATIONS for Allalngletscher using 1961-1990 climate norms
=====

Correlation Analysis with Significance Testing:
Skipping constant column: const
Table with 5 columns: Variable, Correlation Coefficient, P-value, Significant (p < 0.05), and an unlabeled column. Rows include months from august to january.

Number of observations: 70

Regression Summary:

OLS Regression Results
Table with 2 columns: Label (e.g., Dep. Variable, Model, Method) and Value (e.g., annual mass balance, OLS, Least Squares).

Table with 7 columns: coef, std err, t, P>|t|, [0.025, 0.975]. Rows include const and months from may to april.

Table with 4 columns: Statistic, Value, Statistic, Value. Rows include Omnibus, Prob(Omnibus), Skew, and Kurtosis.

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.

Regression: Optimal 1961-1990

=====

OPTIMAL SEASONAL DEVIATIONS for Allalingletscher using 1961-1990 climate norms

=====

Correlation Analysis with Significance Testing:  
Skipping constant column: const

	Variable	Correlation Coefficient	P-value	Significant (p < 0.05)
0	opt_season_td	-0.663145	3.977237e-10	True
1	opt_season_pd	0.186076	1.230024e-01	False

Number of observations: 70

Regression Summary:

OLS Regression Results						
=====						
Dep. Variable:	annual mass balance (mm w.e.)			R-squared:	0.454	
Model:	OLS			Adj. R-squared:	0.437	
Method:	Least Squares			F-statistic:	27.83	
Date:	Wed, 17 Dec 2025			Prob (F-statistic):	1.59e-09	
Time:	20:25:23			Log-Likelihood:	-539.03	
No. Observations:	70			AIC:	1084.	
Df Residuals:	67			BIC:	1091.	
Df Model:	2					
Covariance Type:	nonrobust					
=====						
	coef	std err	t	P> t	[0.025	0.975]
-----						
const	73.5746	81.436	0.903	0.370	-88.972	236.122
opt_season_td	-370.5059	51.675	-7.170	0.000	-473.650	-267.362
opt_season_pd	1.0606	0.810	1.310	0.195	-0.556	2.677
=====						
Omnibus:	2.669		Durbin-Watson:		1.541	
Prob(Omnibus):	0.263		Jarque-Bera (JB):		1.882	
Skew:	-0.338		Prob(JB):		0.390	
Kurtosis:	3.433		Cond. No.		111.	
=====						

Notes:

[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.

Regression: Seasonal 1961-1990

=====
SUMMER/WINTER SEASONAL DEVIATIONS for Allalngletscher using 1961-1990 climate norms
=====

Correlation Analysis with Significance Testing:
Skipping constant column: const
Variable Correlation Coefficient P-value Significant (p < 0.05)
0 summer\_td -0.712312 4.685311e-12 True
1 winter\_pd 0.183920 1.274798e-01 False

Number of observations: 70

Regression Summary:

OLS Regression Results						
=====						
Dep. Variable:	annual mass balance (mm w.e.)			R-squared:	0.527	
Model:	OLS			Adj. R-squared:	0.513	
Method:	Least Squares			F-statistic:	37.38	
Date:	Wed, 17 Dec 2025			Prob (F-statistic):	1.25e-11	
Time:	20:25:23			Log-Likelihood:	-533.96	
No. Observations:	70			AIC:	1074.	
Df Residuals:	67			BIC:	1081.	
Df Model:	2					
Covariance Type:	nonrobust					
=====						
	coef	std err	t	P> t	[0.025	0.975]
-----						
const	116.6081	76.826	1.518	0.134	-36.737	269.953
summer_td	-434.6813	51.969	-8.364	0.000	-538.412	-330.950
winter_pd	1.1106	0.660	1.682	0.097	-0.207	2.428
=====						
Omnibus:	2.272		Durbin-Watson:		1.565	
Prob(Omnibus):	0.321		Jarque-Bera (JB):		1.650	
Skew:	-0.360		Prob(JB):		0.438	
Kurtosis:	3.219		Cond. No.		132.	
=====						

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.

Regression: Monthly 1991-2020

=====
MONTHLY DEVIATIONS for Allalngletscher using 1991-2020 climate norms
=====

Correlation Analysis with Significance Testing:
Skipping constant column: const
Variable Correlation Coefficient P-value Significant (p < 0.05)
3 august\_td -0.575838 1.834509e-07 True
2 july\_td -0.569002 2.755457e-07 True
4 september\_td -0.524591 3.138374e-06 True
1 june\_td -0.507660 7.269171e-06 True
0 may\_td -0.383095 1.062868e-03 True
9 february\_pd 0.191023 1.131806e-01 False
6 november\_pd 0.139067 2.509042e-01 False
10 march\_pd 0.078152 5.201751e-01 False
7 december\_pd -0.056406 6.427920e-01 False
5 october\_pd 0.049693 6.828859e-01 False
11 april\_pd -0.033442 7.834401e-01 False
8 january\_pd 0.026701 8.263267e-01 False

Number of observations: 70

Regression Summary:

OLS Regression Results
Dep. Variable: annual mass balance (mm w.e.) R-squared: 0.577
Model: OLS Adj. R-squared: 0.488
Method: Least Squares F-statistic: 6.472
Date: Wed, 17 Dec 2025 Prob (F-statistic): 4.26e-07
Time: 20:25:23 Log-Likelihood: -530.10
No. Observations: 70 AIC: 1086.
Df Residuals: 57 BIC: 1115.
Df Model: 12
Covariance Type: nonrobust

Table with 7 columns: coef, std err, t, P>|t|, [0.025, 0.975]. Rows include const, may\_td, june\_td, july\_td, august\_td, september\_td, october\_pd, november\_pd, december\_pd, january\_pd, february\_pd, march\_pd, april\_pd.

Table with 2 columns: Statistic, Value. Rows include Omnibus, Prob(Omnibus), Skew, Kurtosis, Durbin-Watson, Jarque-Bera (JB), Prob(JB), Cond. No.

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.

Regression: Optimal 1991-2020

=====
OPTIMAL SEASONAL DEVIATIONS for Allalingletscher using 1991-2020 climate norms
=====

Correlation Analysis with Significance Testing:
Skipping constant column: const
Variable Correlation Coefficient P-value Significant (p < 0.05)
0 opt\_season\_td -0.665403 3.303086e-10 True
1 opt\_season\_pd 0.186076 1.230024e-01 False

Number of observations: 70

Regression Summary:

OLS Regression Results
=====
Dep. Variable: annual mass balance (mm w.e.) R-squared: 0.455
Model: OLS Adj. R-squared: 0.439
Method: Least Squares F-statistic: 28.02
Date: Wed, 17 Dec 2025 Prob (F-statistic): 1.44e-09
Time: 20:25:23 Log-Likelihood: -538.92
No. Observations: 70 AIC: 1084.
Df Residuals: 67 BIC: 1091.
Df Model: 2
Covariance Type: nonrobust
=====
coef std err t P>|t| [0.025 0.975]
-----
const -616.3370 78.515 -7.850 0.000 -773.054 -459.620
opt\_season\_td -374.0837 51.987 -7.196 0.000 -477.850 -270.318
opt\_season\_pd 1.0113 0.809 1.250 0.216 -0.604 2.626
=====
Omnibus: 2.208 Durbin-Watson: 1.529
Prob(Omnibus): 0.332 Jarque-Bera (JB): 1.476
Skew: -0.299 Prob(JB): 0.478
Kurtosis: 3.386 Cond. No. 107.
=====

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.

Regression: Seasonal 1991-2020

=====
SUMMER/WINTER SEASONAL DEVIATIONS for Allalngletscher using 1991-2020 climate norms
=====

Correlation Analysis with Significance Testing:
Skipping constant column: const
Variable Correlation Coefficient P-value Significant (p < 0.05)
0 summer\_td -0.711854 4.903874e-12 True
1 winter\_pd 0.183920 1.274798e-01 False

Number of observations: 70

Regression Summary:

OLS Regression Results						
=====						
Dep. Variable:	annual mass balance (mm w.e.)			R-squared:	0.526	
Model:	OLS			Adj. R-squared:	0.512	
Method:	Least Squares			F-statistic:	37.16	
Date:	Wed, 17 Dec 2025			Prob (F-statistic):	1.38e-11	
Time:	20:25:23			Log-Likelihood:	-534.07	
No. Observations:	70			AIC:	1074.	
Df Residuals:	67			BIC:	1081.	
Df Model:	2					
Covariance Type:	nonrobust					
=====						
	coef	std err	t	P> t	[0.025	0.975]
-----						
const	-639.4128	73.187	-8.737	0.000	-785.495	-493.330
summer_td	-433.6850	52.004	-8.339	0.000	-537.485	-329.885
winter_pd	1.0890	0.661	1.647	0.104	-0.231	2.409
=====						
Omnibus:	2.028		Durbin-Watson:		1.553	
Prob(Omnibus):	0.363		Jarque-Bera (JB):		1.428	
Skew:	-0.333		Prob(JB):		0.490	
Kurtosis:	3.217		Cond. No.		124.	
=====						

Notes:
[1] Standard Errors assume that the covariance matrix of the errors is correctly specified.