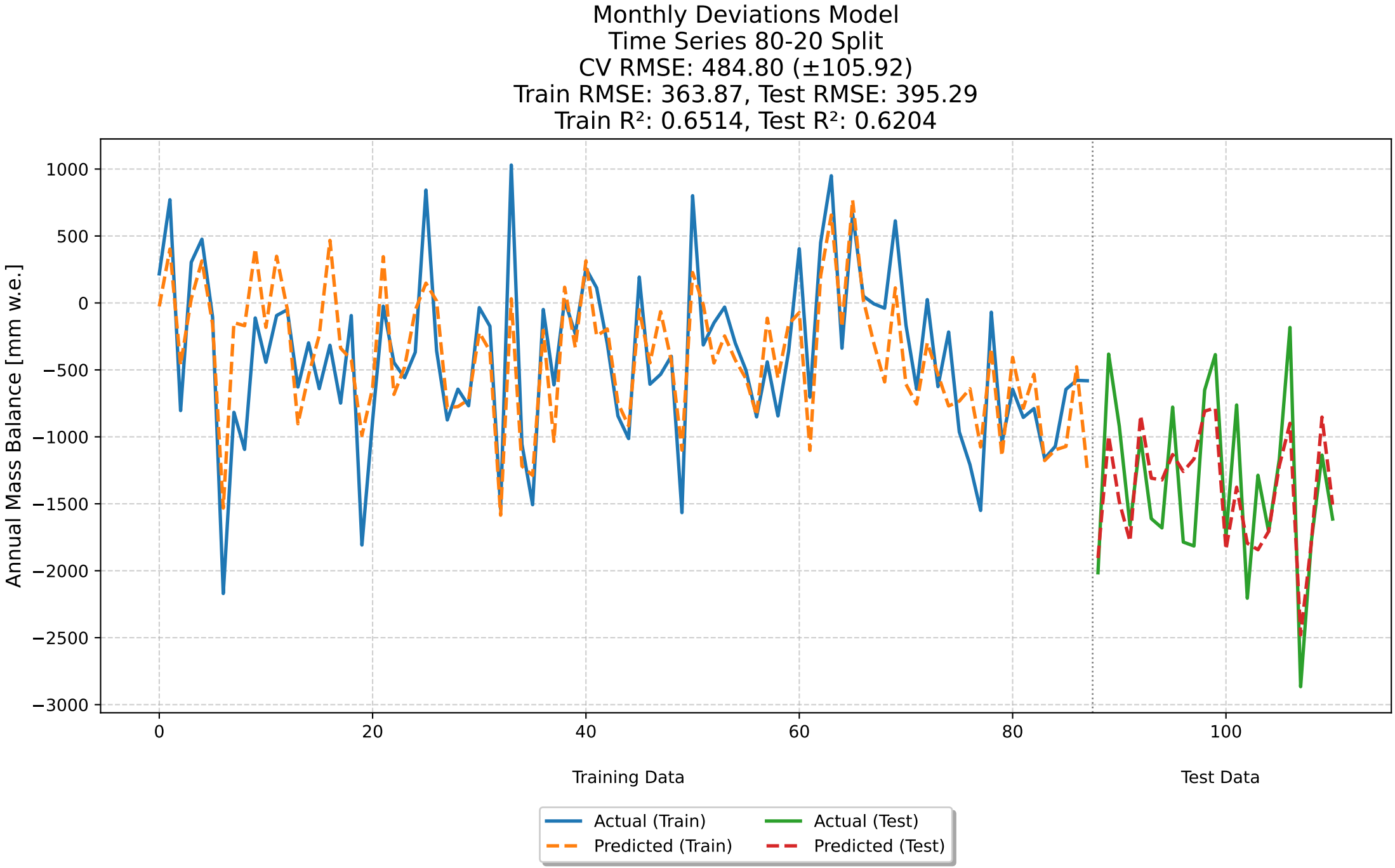
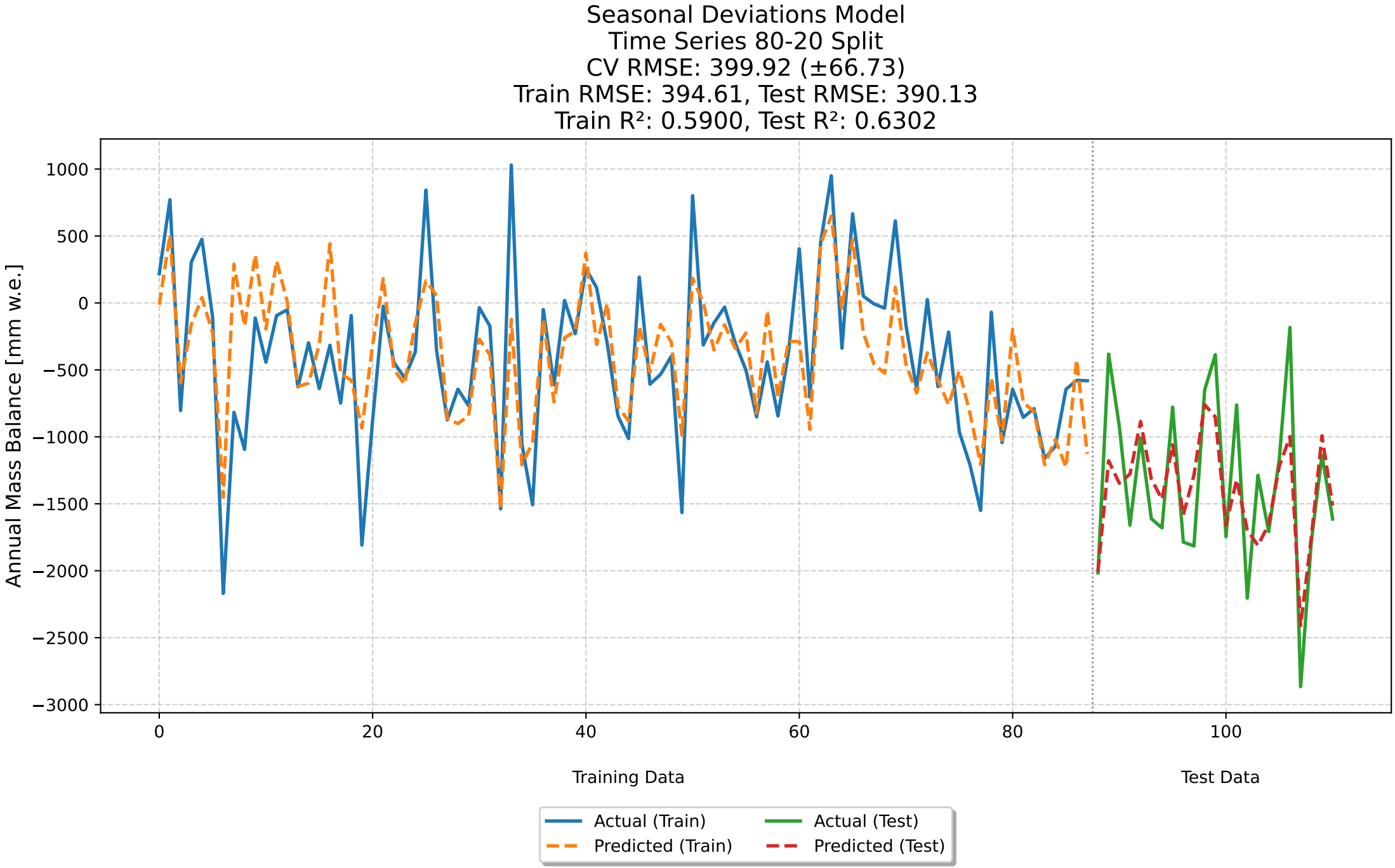
Glacier Mass Balance Model Results: Grosser Aletschgletscher


Monthly Deviations Model
Time Series 80-20 Split
CV RMSE: 484.80 (±105.92)
Train RMSE: 363.87, Test RMSE: 395.29
Train R²: 0.6514, Test R²: 0.6204
Annual Mass Balance [mm w.e.]
1000
500
0
−500
−1000
−1500
−2000
−2500
−3000
0
20
40
60
80
100
Training Data
Test Data
Actual (Train)
Predicted (Train)
Actual (Test)
Predicted (Test)

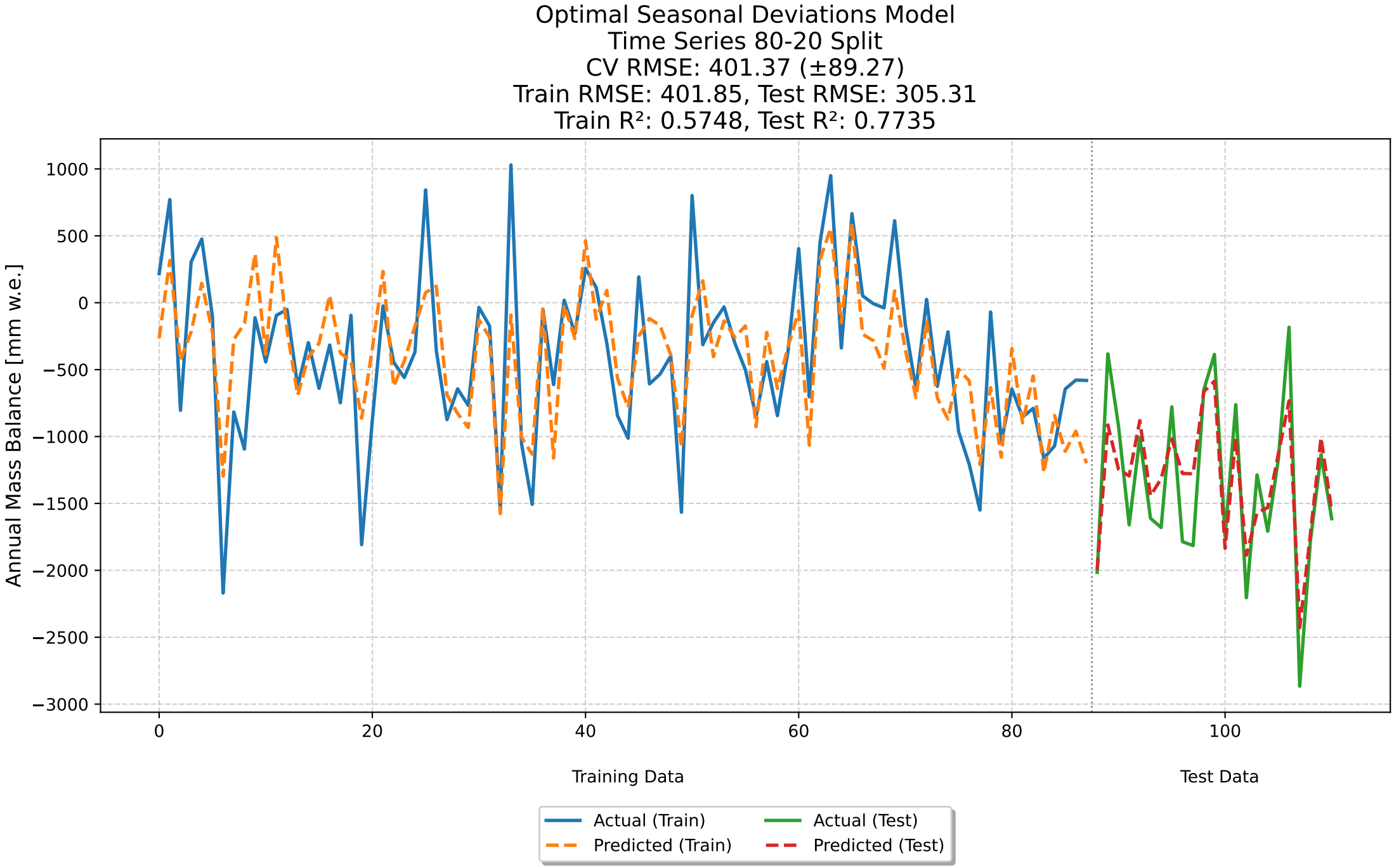
Monthly Deviations Model - Performance Metrics and Coefficients

Metric	Value
Cross-Validation RMSE	484.80 (±105.92)
Training RMSE	363.87
Training R^2	0.6514
Test RMSE	395.29
Test R^2	0.6204
Feature	Coefficient
may_td	-135.7609
june_td	-144.0990
july_td	-230.3832
august_td	-80.2246
september_td	-114.2787
october_pd	131.7376
november_pd	107.9588
december_pd	123.6752
january_pd	69.3526
february_pd	47.9404
march_pd	32.8391
april_pd	-17.7641
Intercept	-399.0000


Seasonal Deviations Model
Time Series 80-20 Split
CV RMSE: 399.92 (±66.73)
Train RMSE: 394.61, Test RMSE: 390.13
Train R²: 0.5900, Test R²: 0.6302
Annual Mass Balance [mm w.e.]
1000
500
0
−500
−1000
−1500
−2000
−2500
−3000
0
20
40
60
80
100
Training Data
Test Data
Actual (Train)
Predicted (Train)
Actual (Test)
Predicted (Test)

Seasonal Deviations Model - Performance Metrics and Coefficients

Metric	Value
Cross-Validation RMSE	399.92 (±66.73)
Training RMSE	394.61
Training R^2	0.5900
Test RMSE	390.13
Test R^2	0.6302
Feature	Coefficient
summer_temp_dev	-396.3760
winter_precip_dev	220.3379
Intercept	-399.0000


Optimal Seasonal Deviations Model
Time Series 80-20 Split
CV RMSE: 401.37 (±89.27)
Train RMSE: 401.85, Test RMSE: 305.31
Train R²: 0.5748, Test R²: 0.7735
Annual Mass Balance [mm w.e.]
1000
500
0
−500
−1000
−1500
−2000
−2500
−3000
0
20
40
60
80
100
Training Data
Test Data
Actual (Train)
Predicted (Train)
Actual (Test)
Predicted (Test)

Optimal Seasonal Deviations Model - Performance Metrics and Coefficients

Metric	Value
Cross-Validation RMSE	401.37 (±89.27)
Training RMSE	401.85
Training R^2	0.5748
Test RMSE	305.31
Test R^2	0.7735
Feature	Coefficient
optimal_summer_temp_dev	-388.5778
optimal_winter_precip_dev	221.1221
Intercept	-399.0000