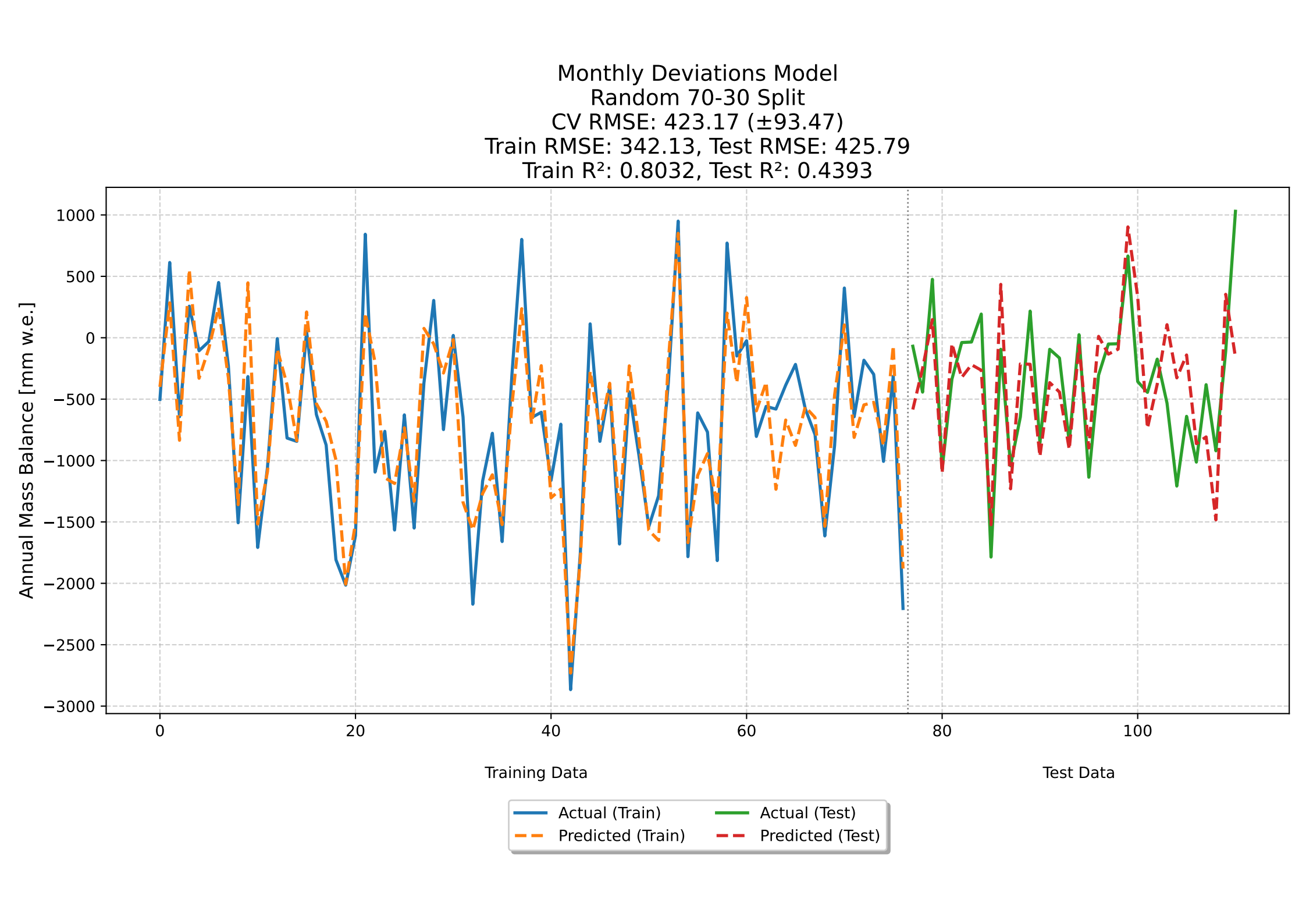
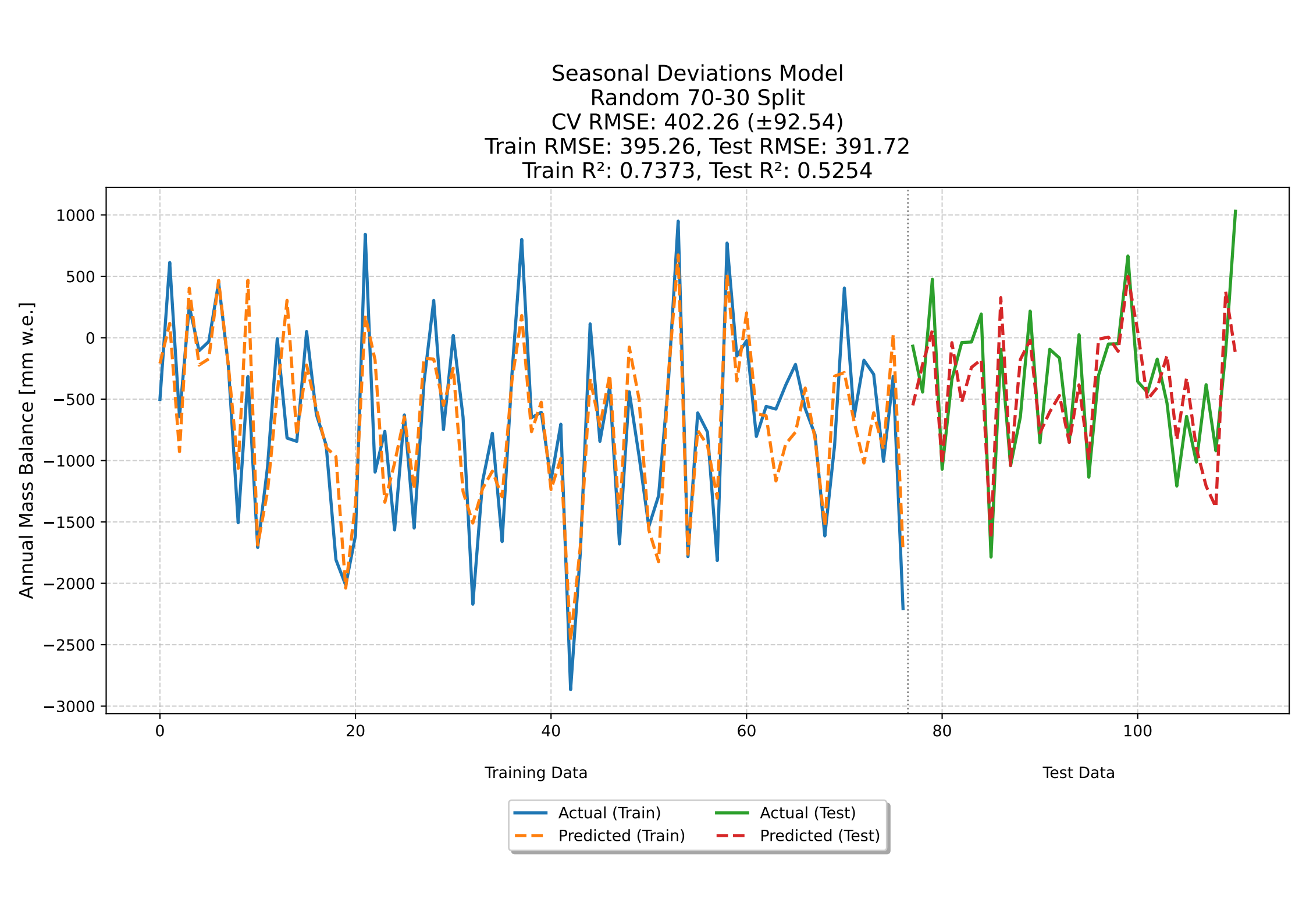
Glacier Mass Balance Model Results: Grosser Aletschgletscher


Monthly Deviations Model
Random 70-30 Split
CV RMSE: 423.17 (±93.47)
Train RMSE: 342.13, Test RMSE: 425.79
Train R²: 0.8032, Test R²: 0.4393
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)

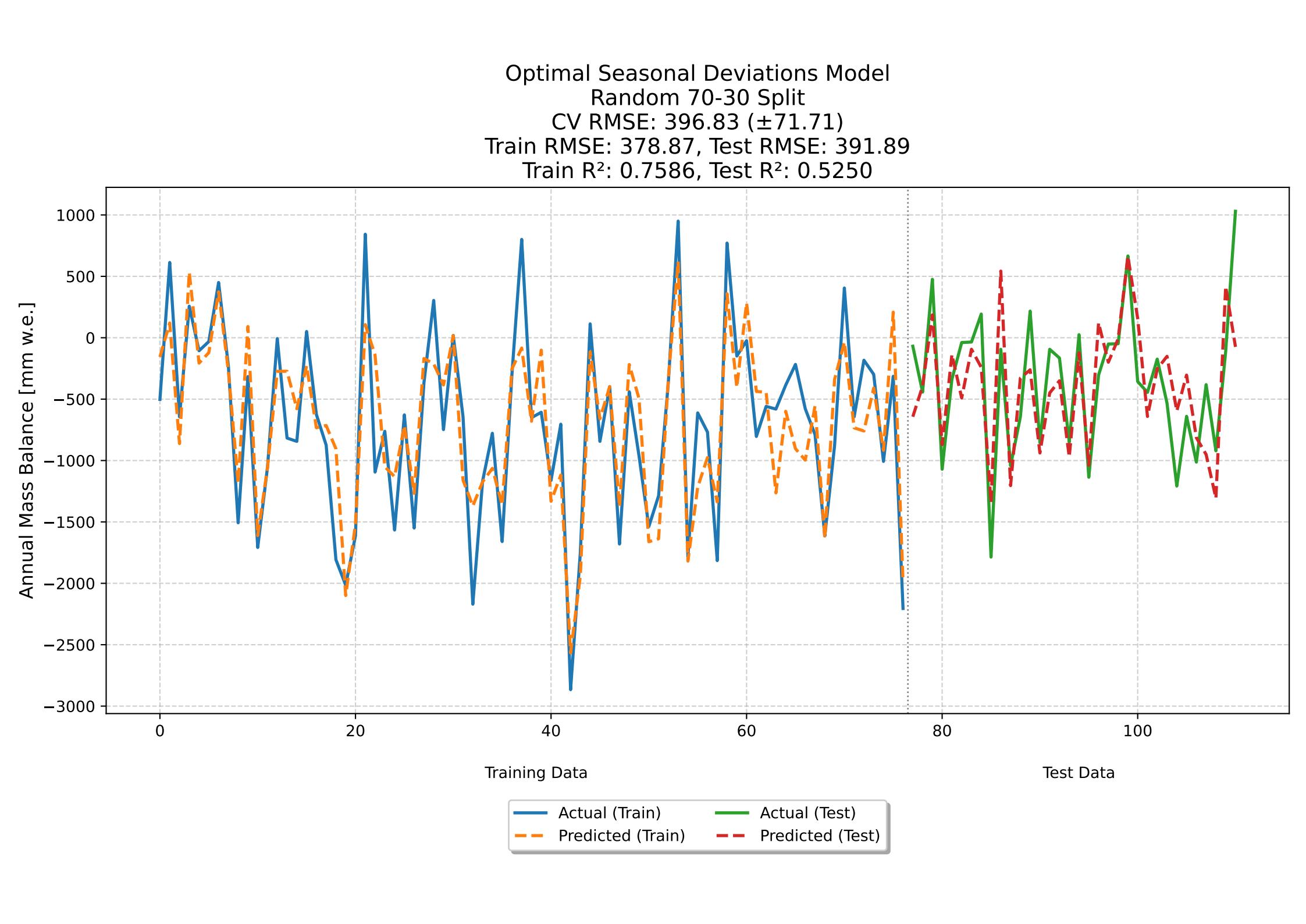
Monthly Deviations Model - Performance Metrics and Coefficients

Metric	Value
Cross-Validation RMSE	423.17 (±93.47)
Training RMSE	342.13
Training R^2	0.8032
Test RMSE	425.79
Test R^2	0.4393
Feature	Coefficient
may_td	-238.2530
june_td	-167.7483
july_td	-209.3012
august_td	-148.6505
september_td	-70.2066
october_pd	157.3459
november_pd	88.2916
december_pd	100.4038
january_pd	130.7602
february_pd	71.3257
march_pd	59.1317
april_pd	-30.2741
Intercept	-701.5065


Seasonal Deviations Model
Random 70-30 Split
CV RMSE: 402.26 (±92.54)
Train RMSE: 395.26, Test RMSE: 391.72
Train R²: 0.7373, Test R²: 0.5254
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	402.26 (±92.54)
Training RMSE	395.26
Training R^2	0.7373
Test RMSE	391.72
Test R^2	0.5254
Feature	Coefficient
summer_temp_dev	-591.1555
winter_precip_dev	222.8173
Intercept	-701.5065


Optimal Seasonal Deviations Model
Random 70-30 Split
CV RMSE: 396.83 (±71.71)
Train RMSE: 378.87, Test RMSE: 391.89
Train R²: 0.7586, Test R²: 0.5250
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	396.83 (±71.71)
Training RMSE	378.87
Training R^2	0.7586
Test RMSE	391.89
Test R^2	0.5250
Feature	Coefficient
optimal_summer_temp_dev	-598.1744
optimal_winter_precip_dev	223.0012
Intercept	-701.5065