

西条 - オキシダント予測の分析

Model Parameters:
Prefecture code: 38
Station code: 38206050
Station name: 西条
Target item: Ox(ppm)
Number of data points in the train set: 15488
Number of data points in the test set: 3872
Forecast horizon (hours): 24
Model: GRU
Number of epochs: 100
Elapsed time: 40 min 3 sec
Number of used features: 163

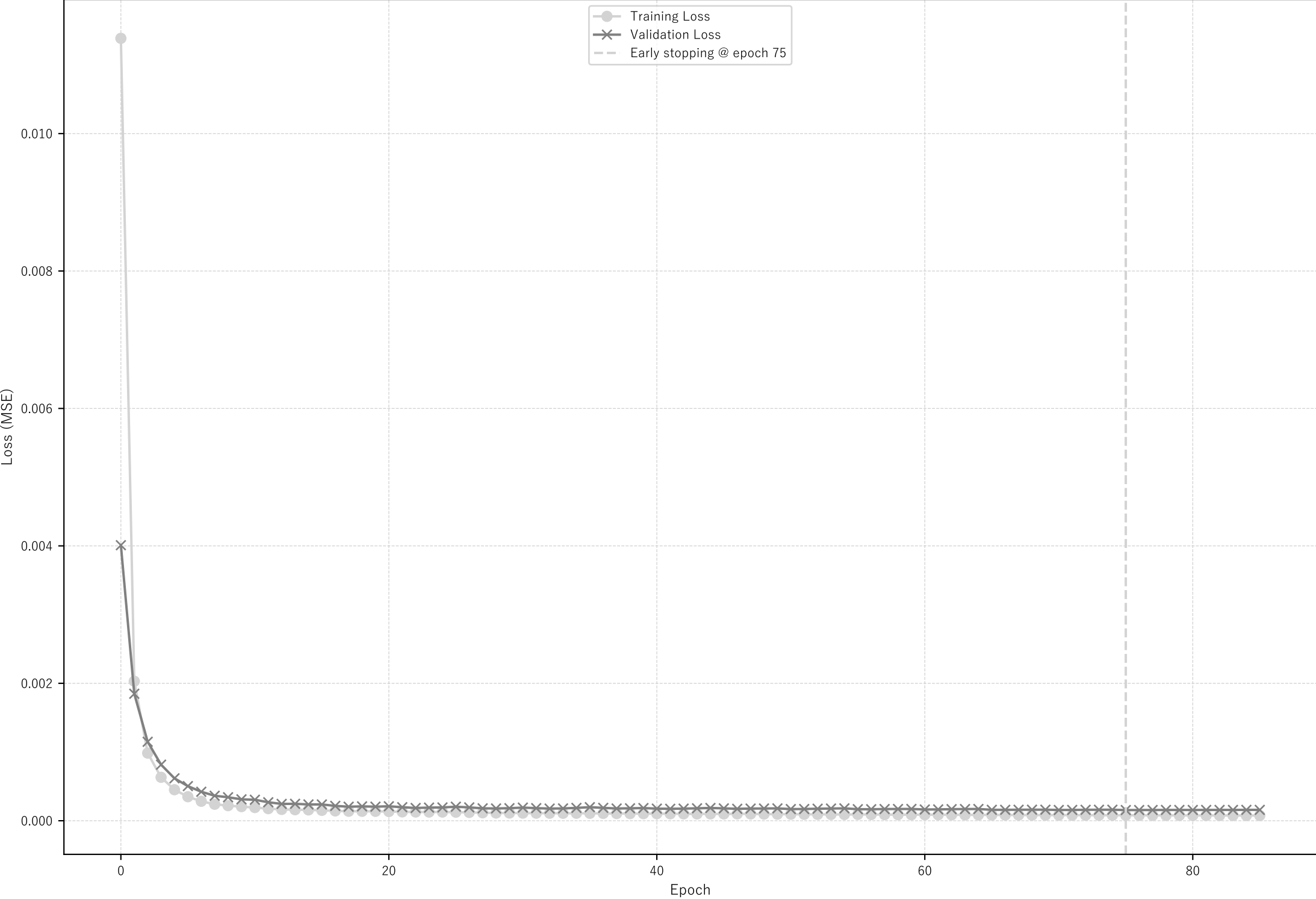
Features:

NO(ppm), NO2(ppm), NOx(ppm), U, V
Ox(ppm)_lag1, NO(ppm)_lag1, NO2(ppm)_lag1, U_lag1, V_lag1
Ox(ppm)_lag2, NO(ppm)_lag2, NO2(ppm)_lag2, U_lag2, V_lag2
Ox(ppm)_lag3, NO(ppm)_lag3, NO2(ppm)_lag3, U_lag3, V_lag3
Ox(ppm)_lag4, NO(ppm)_lag4, NO2(ppm)_lag4, U_lag4, V_lag4
Ox(ppm)_lag5, NO(ppm)_lag5, NO2(ppm)_lag5, U_lag5, V_lag5
Ox(ppm)_lag6, NO(ppm)_lag6, NO2(ppm)_lag6, U_lag6, V_lag6
Ox(ppm)_lag7, NO(ppm)_lag7, NO2(ppm)_lag7, U_lag7, V_lag7
Ox(ppm)_lag8, NO(ppm)_lag8, NO2(ppm)_lag8, U_lag8, V_lag8
Ox(ppm)_lag9, NO(ppm)_lag9, NO2(ppm)_lag9, U_lag9, V_lag9
Ox(ppm)_lag10, NO(ppm)_lag10, NO2(ppm)_lag10, U_lag10, V_lag10
Ox(ppm)_lag11, NO(ppm)_lag11, NO2(ppm)_lag11, U_lag11, V_lag11
Ox(ppm)_lag12, NO(ppm)_lag12, NO2(ppm)_lag12, U_lag12, V_lag12
Ox(ppm)_lag13, NO(ppm)_lag13, NO2(ppm)_lag13, U_lag13, V_lag13
Ox(ppm)_lag14, NO(ppm)_lag14, NO2(ppm)_lag14, U_lag14, V_lag14
Ox(ppm)_lag15, NO(ppm)_lag15, NO2(ppm)_lag15, U_lag15, V_lag15
Ox(ppm)_lag16, NO(ppm)_lag16, NO2(ppm)_lag16, U_lag16, V_lag16
Ox(ppm)_lag17, NO(ppm)_lag17, NO2(ppm)_lag17, U_lag17, V_lag17
Ox(ppm)_lag18, NO(ppm)_lag18, NO2(ppm)_lag18, U_lag18, V_lag18
Ox(ppm)_lag19, NO(ppm)_lag19, NO2(ppm)_lag19, U_lag19, V_lag19
Ox(ppm)_lag20, NO(ppm)_lag20, NO2(ppm)_lag20, U_lag20, V_lag20
Ox(ppm)_lag21, NO(ppm)_lag21, NO2(ppm)_lag21, U_lag21, V_lag21
Ox(ppm)_lag22, NO(ppm)_lag22, NO2(ppm)_lag22, U_lag22, V_lag22
Ox(ppm)_lag23, NO(ppm)_lag23, NO2(ppm)_lag23, U_lag23, V_lag23
Ox(ppm)_roll_mean_3, NO(ppm)_roll_mean_3, NO2(ppm)_roll_mean_3, U_roll_mean_3, V_roll_mean_3
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Ox(ppm)_roll_mean_12, NO(ppm)_roll_mean_12, NO2(ppm)_roll_mean_12, U_roll_mean_12, V_roll_mean_12
Ox(ppm)_roll_std_12, NO(ppm)_roll_std_12, NO2(ppm)_roll_std_12, U_roll_std_12, V_roll_std_12
Ox(ppm)_diff_1, Ox(ppm)_diff_2, Ox(ppm)_diff_3, Ox(ppm)_diff_cumsum_3, NO(ppm)_diff_3
NO2(ppm)_diff_3, U_diff_3, V_diff_3, hour_sin, hour_cos
dayofweek, is_weekend, NO_ratio

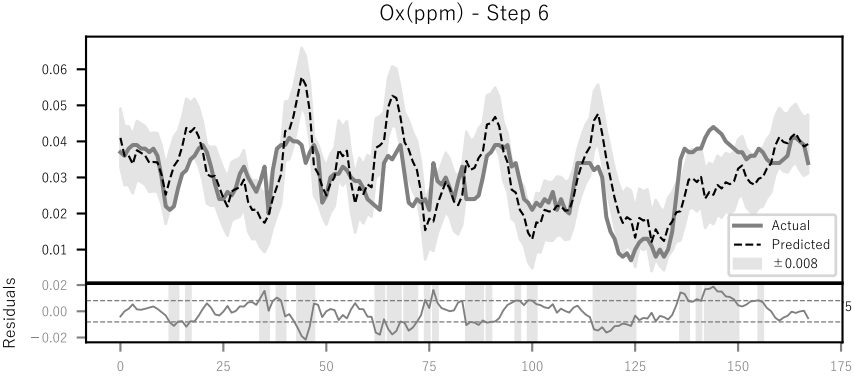
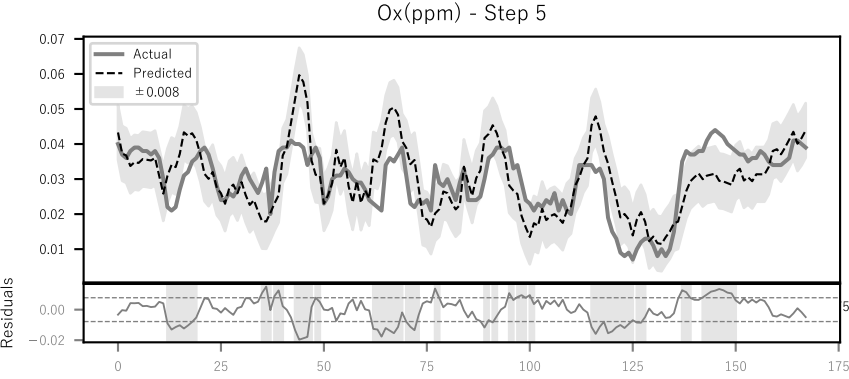
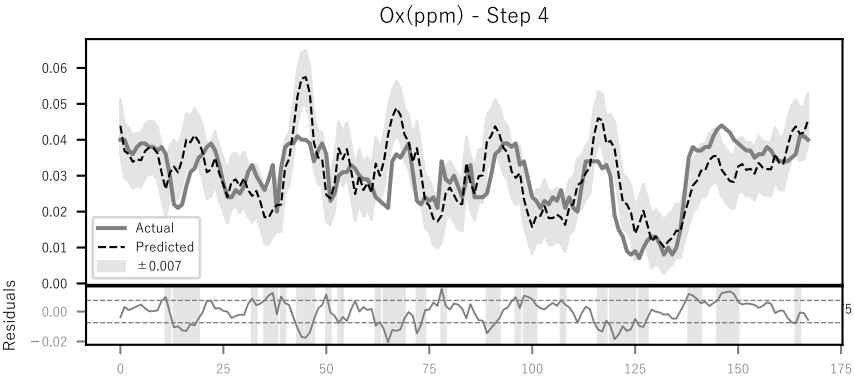
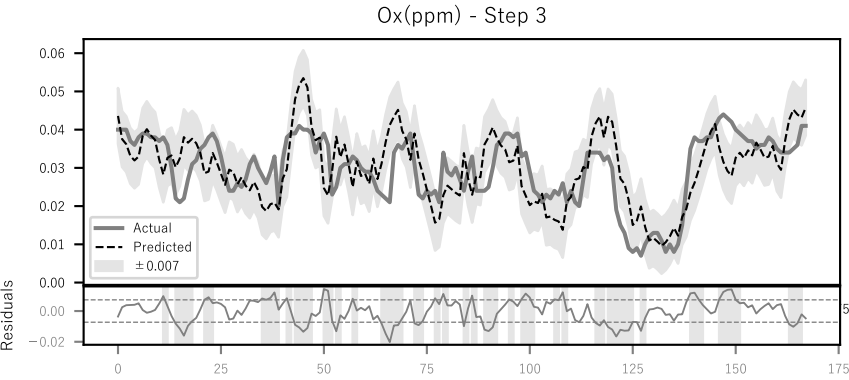
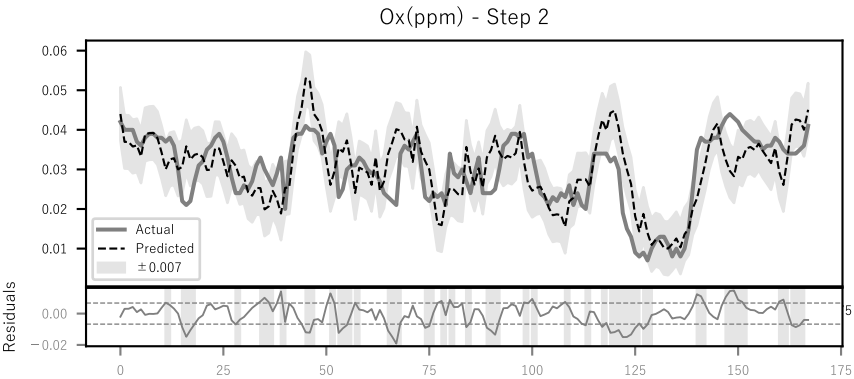
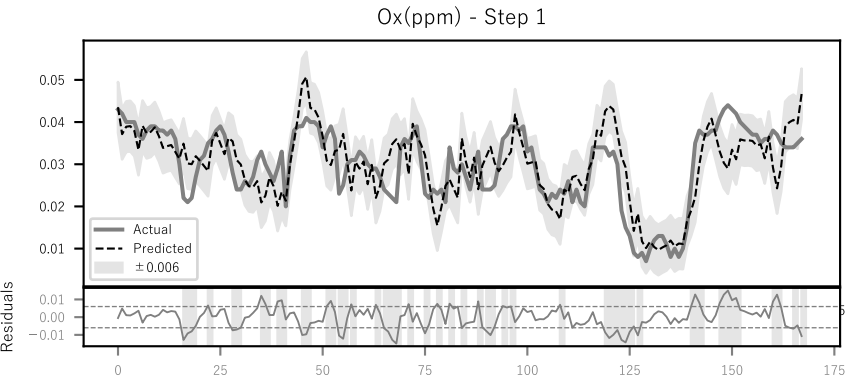
Metrics per Forecast Step:

1 - R²: 0.7394, MAE: 0.0060, RMSE: 0.0082
2 - R²: 0.6838, MAE: 0.0067, RMSE: 0.0090
3 - R²: 0.6265, MAE: 0.0072, RMSE: 0.0098
4 - R²: 0.6008, MAE: 0.0076, RMSE: 0.0101
5 - R²: 0.5565, MAE: 0.0080, RMSE: 0.0107
6 - R²: 0.5215, MAE: 0.0083, RMSE: 0.0111
7 - R²: 0.4860, MAE: 0.0086, RMSE: 0.0115
8 - R²: 0.4610, MAE: 0.0088, RMSE: 0.0118
9 - R²: 0.4247, MAE: 0.0091, RMSE: 0.0122
10 - R²: 0.3844, MAE: 0.0093, RMSE: 0.0126
11 - R²: 0.3683, MAE: 0.0094, RMSE: 0.0128
12 - R²: 0.3500, MAE: 0.0095, RMSE: 0.0129
13 - R²: 0.3372, MAE: 0.0097, RMSE: 0.0131
14 - R²: 0.3215, MAE: 0.0098, RMSE: 0.0132
15 - R²: 0.2712, MAE: 0.0100, RMSE: 0.0137
16 - R²: 0.2712, MAE: 0.0100, RMSE: 0.0137
17 - R²: 0.2431, MAE: 0.0102, RMSE: 0.0140
18 - R²: 0.2515, MAE: 0.0102, RMSE: 0.0139
19 - R²: 0.2491, MAE: 0.0103, RMSE: 0.0139
20 - R²: 0.2470, MAE: 0.0102, RMSE: 0.0139
21 - R²: 0.2548, MAE: 0.0101, RMSE: 0.0139
22 - R²: 0.2592, MAE: 0.0101, RMSE: 0.0138
23 - R²: 0.2662, MAE: 0.0101, RMSE: 0.0138
24 - R²: 0.2687, MAE: 0.0101, RMSE: 0.0137

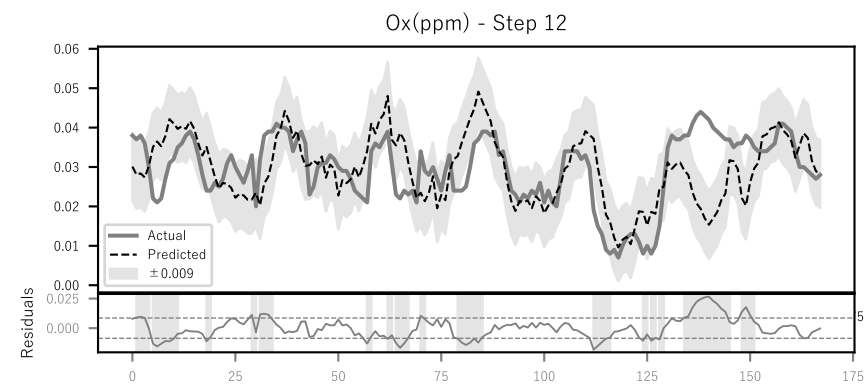
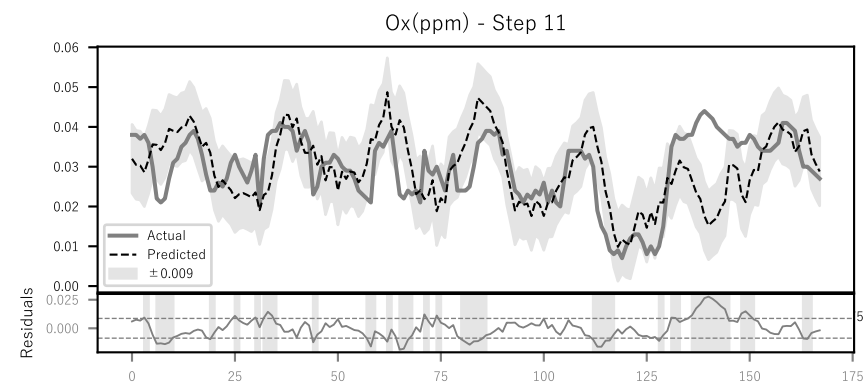
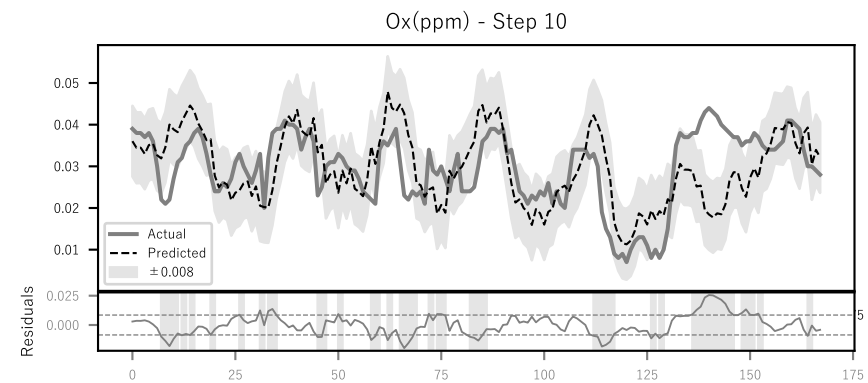
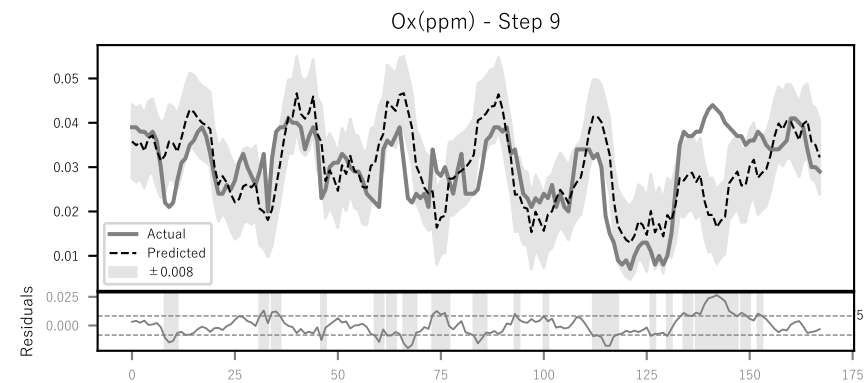
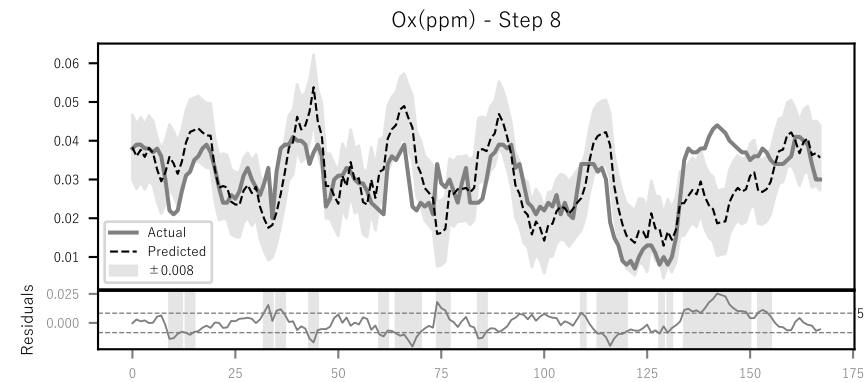
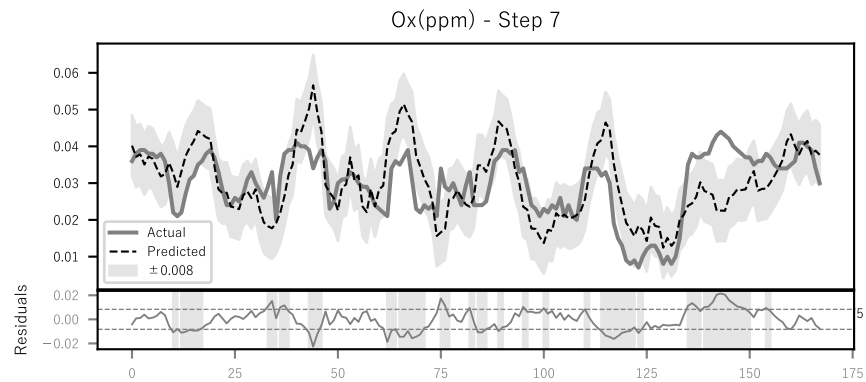
Training and Validation Loss



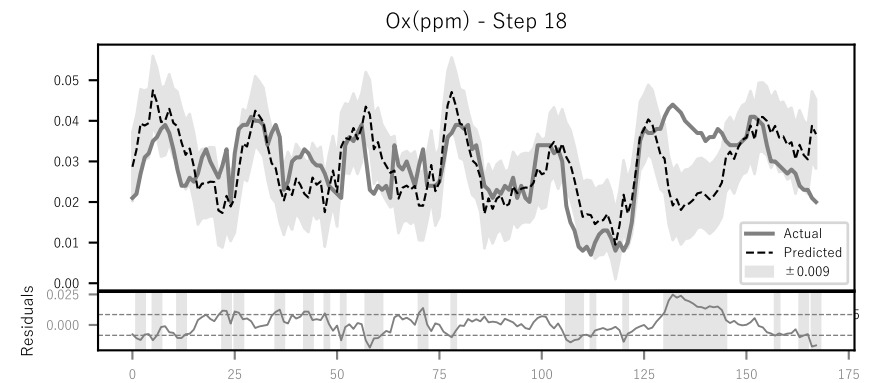
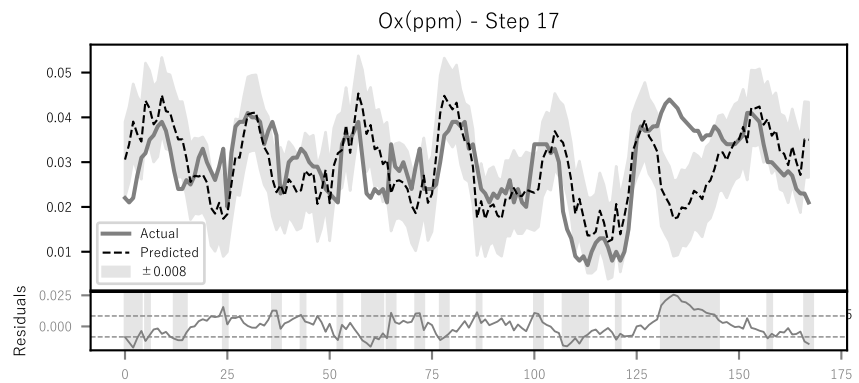
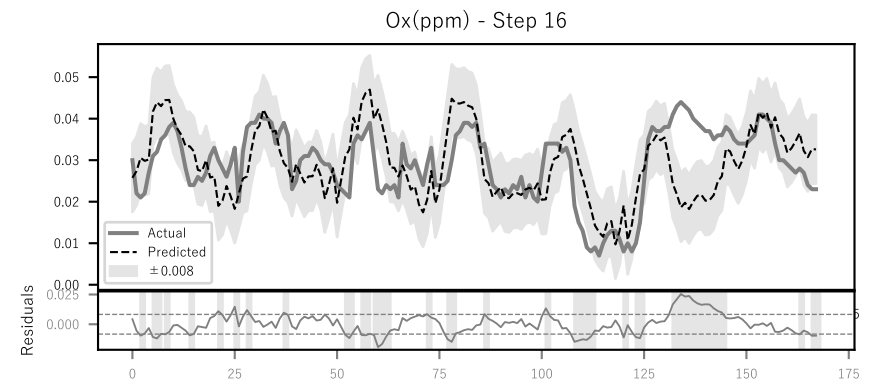
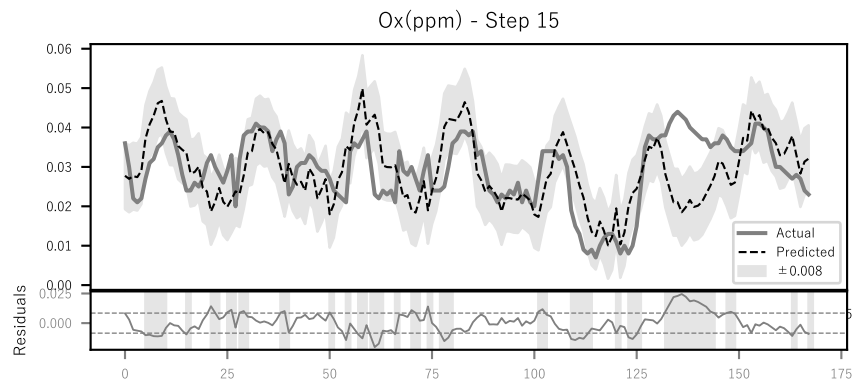
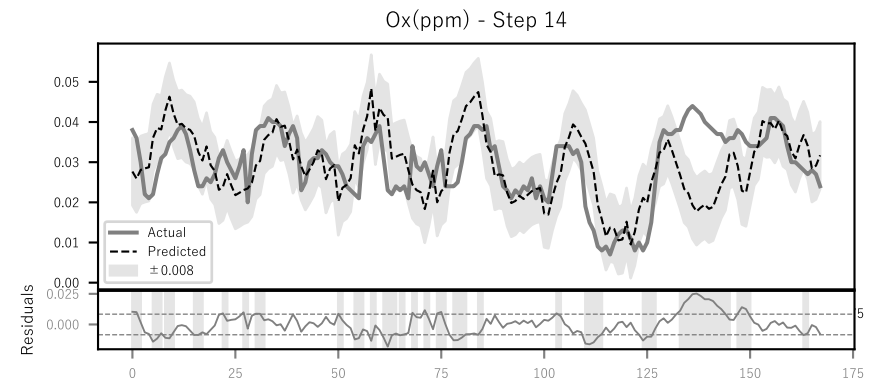
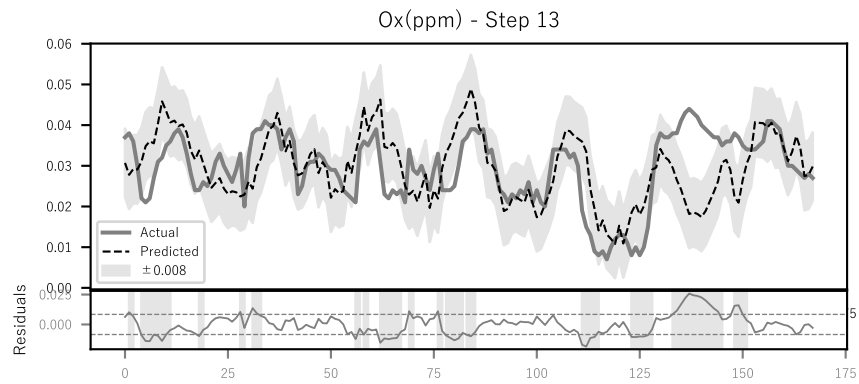
Comparison between actual and predicted values
with \pm Standard Deviation Bands



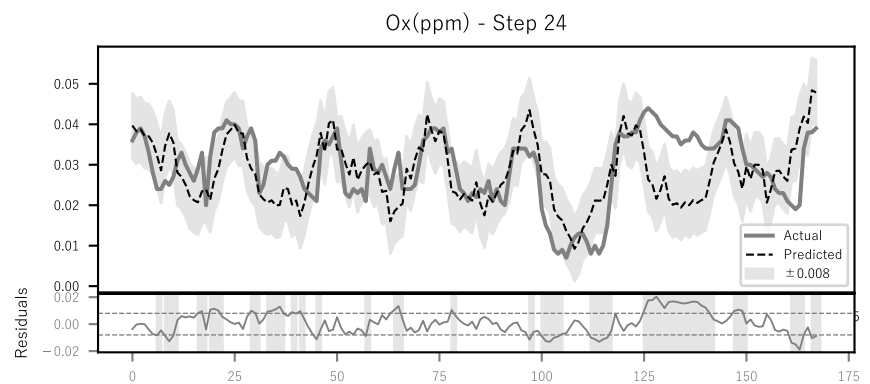
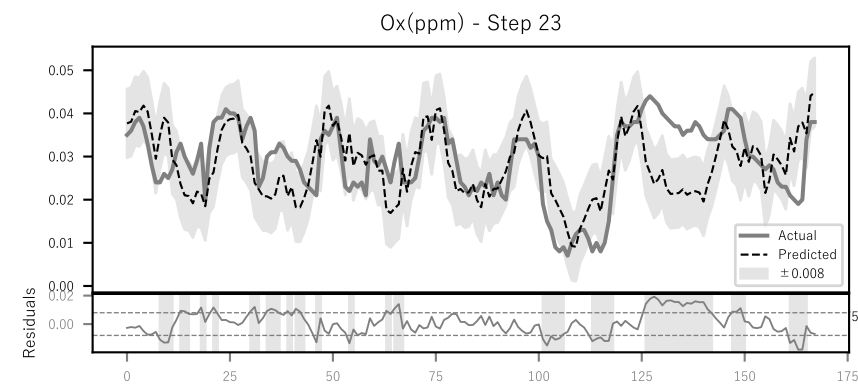
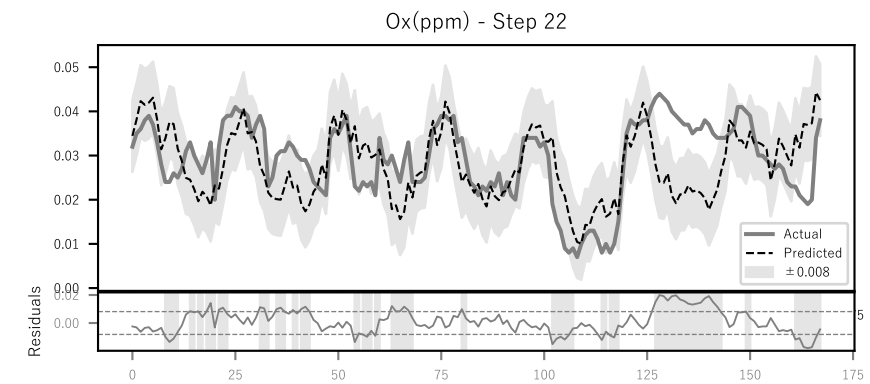
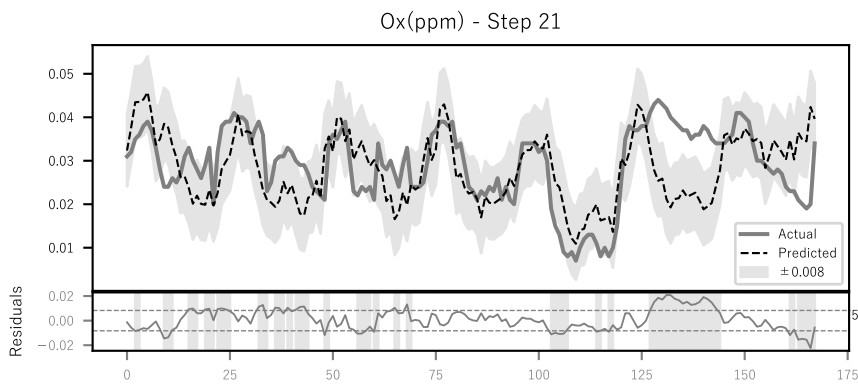
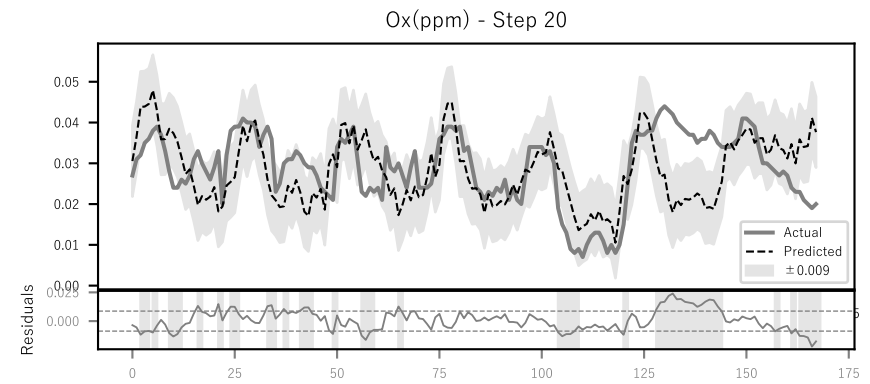
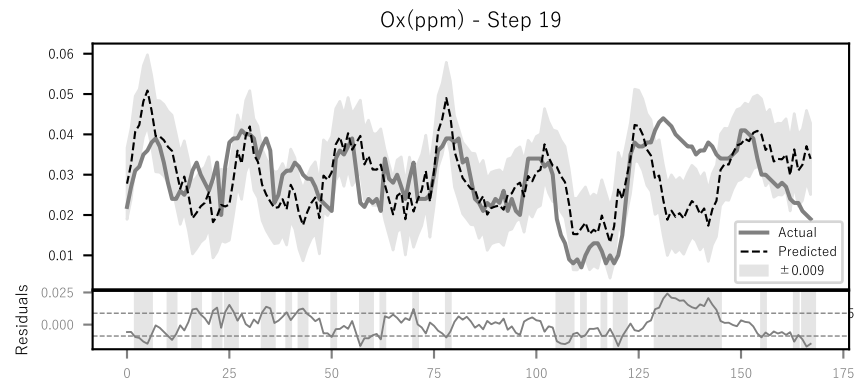
Comparison between actual and predicted values
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Comparison between actual and predicted values
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Comparison between actual and predicted values
with \pm Standard Deviation Bands



MAE, RMSE, and R² for each Forecast Step