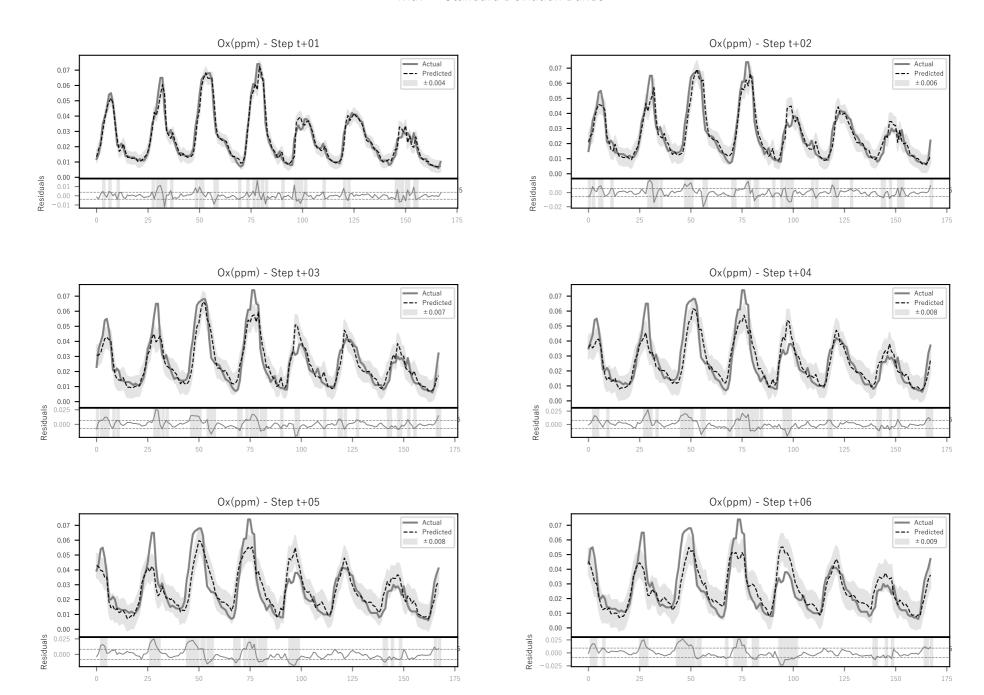
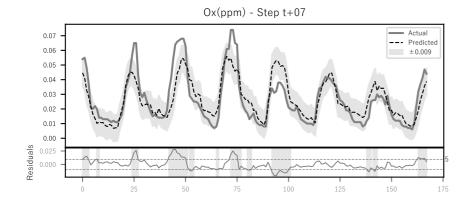
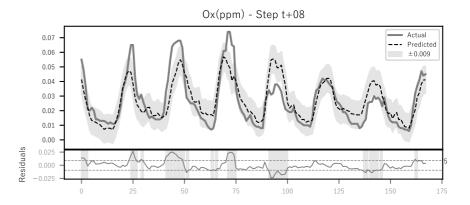
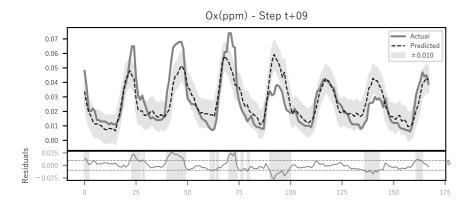
川之江 - オキシダント予測の分析

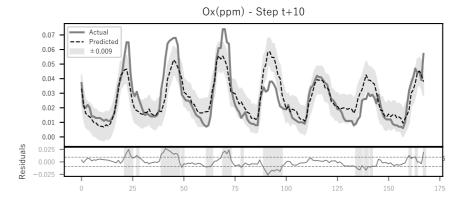
Model Parameters: Prefecture code: 38 Station code: 38208030 Station name: 川之江 Target item: Ox(ppm) Number of data points in the train set: 13687 Number of data points in the test set: 5866 Forecast horizon (hours): 24 Number of used features: 141 Ox(ppm), NO(ppm), NO2(ppm), U, V Ox(ppm)_lag1, Ox(ppm)_lag2, Ox(ppm)_lag3, Ox(ppm)_lag4, Ox(ppm)_lag5 Ox(ppm)_lag6, Ox(ppm)_lag7, Ox(ppm)_lag8, Ox(ppm)_lag9, Ox(ppm)_lag10 Ox(ppm)_lag11, Ox(ppm)_lag12, Ox(ppm)_lag13, Ox(ppm)_lag14, Ox(ppm)_lag15 Ox(ppm)_lag16, Ox(ppm)_lag17, Ox(ppm)_lag18, Ox(ppm)_lag19, Ox(ppm)_lag20 Ox(ppm)_lag21, Ox(ppm)_lag22, Ox(ppm)_lag23, NO(ppm)_lag1, NO(ppm)_lag2 NO(ppm)_lag3, NO(ppm)_lag4, NO(ppm)_lag5, NO(ppm)_lag6, NO(ppm)_lag7 NO(ppm)_lag8, NO(ppm)_lag9, NO(ppm)_lag10, NO(ppm)_lag11, NO(ppm)_lag12 NO(ppm)_lag13, NO(ppm)_lag14, NO(ppm)_lag15, NO(ppm)_lag16, NO(ppm)_lag17 NO(ppm)_lag18, NO(ppm)_lag19, NO(ppm)_lag20, NO(ppm)_lag21, NO(ppm)_lag22 NO(ppm)_lag23, NO2(ppm)_lag1, NO2(ppm)_lag2, NO2(ppm)_lag3, NO2(ppm)_lag4 NO2(ppm)_lag5, NO2(ppm)_lag6, NO2(ppm)_lag7, NO2(ppm)_lag8, NO2(ppm)_lag9 NO2(ppm) lag10, NO2(ppm) lag11, NO2(ppm) lag12, NO2(ppm) lag13, NO2(ppm) lag14 NO2(ppm) lag15, NO2(ppm) lag16, NO2(ppm) lag17, NO2(ppm) lag18, NO2(ppm) lag19 NO2(ppm)_lag15, NO2(ppm)_lag16, NO2(ppm)_lag17, NO2(ppm)_lag18, NO2(ppm) NO2(ppm)_lag20, NO2(ppm)_lag21, NO2(ppm)_lag22, NO2(ppm)_lag23, U_lag1 U_lag2, U_lag3, U_lag4, U_lag5, U_lag6 U_lag7, U_lag8, U_lag9, U_lag10, U_lag11 U_lag12, U_lag13, U_lag14, U_lag15, U_lag16 U_lag17, U_lag18, U_lag19, U_lag20, U_lag21 U_lag22, U_lag23, V_lag1, V_lag2, V_lag3 V_lag4, V_lag5, V_lag6, V_lag7, V_lag8 V_lag10, V_lag11, V_lag12, V_lag13 V_lag15, V_lag15, V_lag16, V_lag17, V_lag18 V_lag19, V_lag15, V_lag16, V_lag21, V_lag23 V_lag19, V_lag21, V_lag22, V_lag23 Ox(ppm)_roll_mean_3, Ox(ppm)_roll_std_6, NO(ppm)_roll_mean_3, NO(ppm)_roll_mean_3, NO(ppm)_roll_std_6, NO(ppm)_roll_mean_3, NO(ppm)_roll_std_6, NO(ppm)_roll_std_7, NO(ppm)_roll_std_7, NO(ppm)_roll_std_7, NO(ppm)_roll_std_7, NO(ppm)_roll_std_7, NO(ppm)_roll_std_7, NO(ppm)_roll_std_7, NO(ppm)_roll Ox(ppm)_roll_mean_3, Ox(ppm)_roll_std_6, NO(ppm)_roll_mean_3, NO(ppm)_roll_std_6, NO2(ppm)_roll_mean_3 NO2(ppm)_roll_std_6, U_roll_mean_3, U_roll_std_6, V_roll_mean_3, V_roll_std_6 Ox(ppm)_diff_1, Ox(ppm)_diff_2, Ox(ppm)_diff_3, NO(ppm)_diff_3, NO2(ppm)_diff_3 U_diff_3, V_diff_3, hour_sin, hour_cos, dayofweek is weekend Metrics per Forecast Step: Ox(ppm)_t+01 - R²: 0.9148, MAE: 0.0030, RMSE: 0.0044 Ox(ppm)_t+02 - R2: 0.8188, MAE: 0.0046, RMSE: 0.0064 Ox(ppm)_t+03 - R²: 0.7423, MAE: 0.0056, RMSE: 0.0076 Ox(ppm)_t+04 - R²: 0.6771, MAE: 0.0064, RMSE: 0.0085 Ox(ppm) t+05 - R²: 0.6176, MAE: 0.0071, RMSE: 0.0093 Ox(ppm)_t+06 - R²: 0.5749, MAE: 0.0075, RMSE: 0.0098 Ox(ppm) t+07 - R²: 0.5481, MAE: 0.0078, RMSE: 0.0101 Ox(ppm)_t+08 - R²: 0.5227, MAE: 0.0080, RMSE: 0.0104 Ox(ppm)_t+09 - R²: 0.5031, MAE: 0.0082, RMSE: 0.0106 Ox(ppm)_t+10 - R²: 0.4836, MAE: 0.0083, RMSE: 0.0108 Ox(ppm)_t+11 - R²: 0.4691, MAE: 0.0085, RMSE: 0.0110 Ox(ppm) t+12 - R²: 0.4526, MAE: 0.0087, RMSE: 0.0111 Ox(ppm) t+13 - R²: 0.4406, MAE: 0.0088, RMSE: 0.0112 Ox(ppm)_t+14 - R2: 0.4260, MAE: 0.0089, RMSE: 0.0114 Ox(ppm)_t+15 - R²: 0.4197, MAE: 0.0090, RMSE: 0.0115 Ox(ppm)_t+16 - R²: 0.4161, MAE: 0.0090, RMSE: 0.0115 Ox(ppm) t+17 - R²: 0.4137, MAE: 0.0091, RMSE: 0.0115 Ox(ppm)_t+18 - R²: 0.4054, MAE: 0.0091, RMSE: 0.0116 Ox(ppm)_t+19 - R2: 0.3985, MAE: 0.0092, RMSE: 0.0117 Ox(ppm) t+20 - R²: 0.3961, MAE: 0.0092, RMSE: 0.0117 Ox(ppm)_t+21 - R²: 0.3858, MAE: 0.0093, RMSE: 0.0118 Ox(ppm) t+22 - R²: 0.3876, MAE: 0.0093, RMSE: 0.0118 Ox(ppm)_t+23 - R²: 0.3867, MAE: 0.0093, RMSE: 0.0118 Ox(ppm)_t+24 - R²: 0.3834, MAE: 0.0093, RMSE: 0.0118

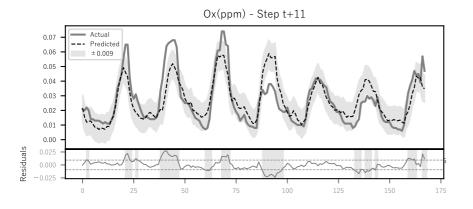


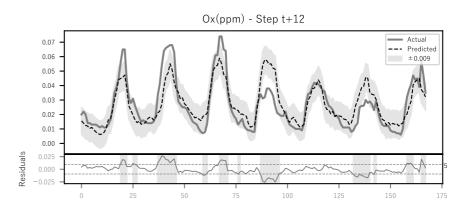


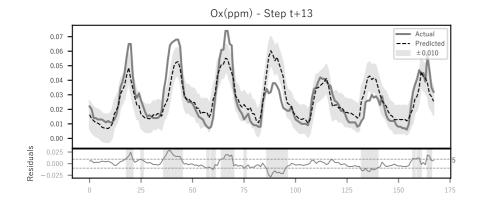


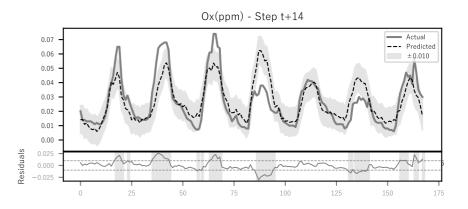


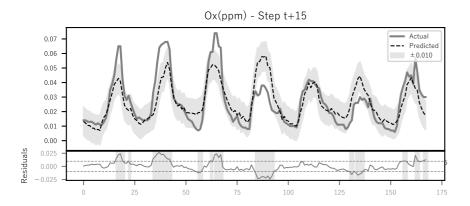


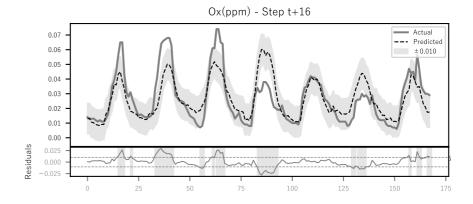


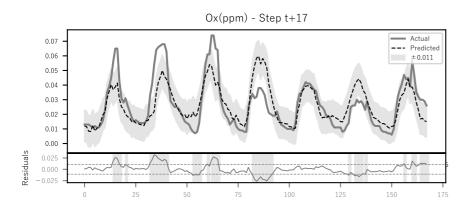


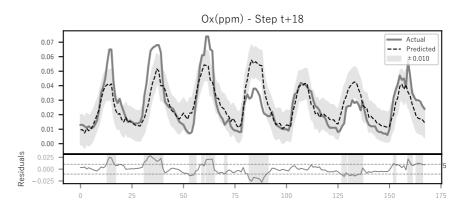


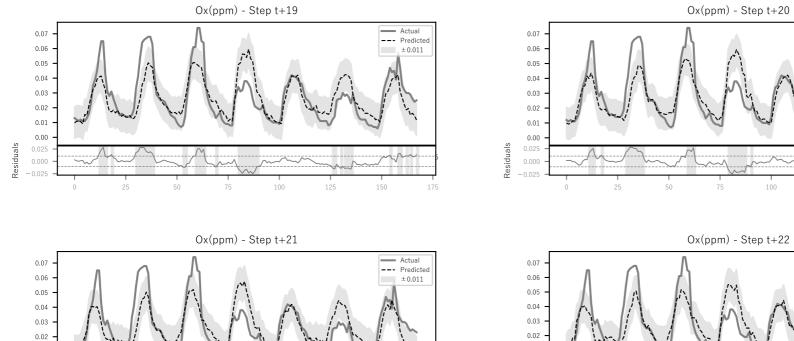


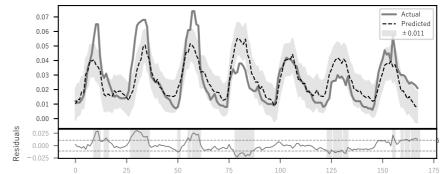










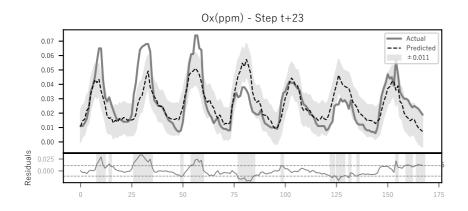


--- Actual
--- Predicted

± 0.010

150

125



100

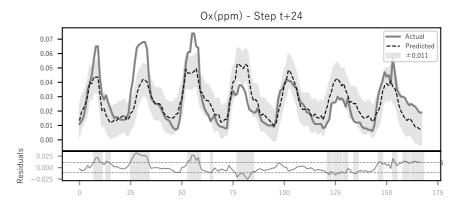
125

150

0.01

0.00

Residuals 0.000 -0.025



Normalized Feature Importance (per feature) 1.0 - 1.00 1.00 1.00 1.00 1.00 1.00 | 1.00 1.00 0.95 0.96 0.80 0.30 0.42 0.37 0.29 0.00 0.21 0.51 0.65 Ox(ppm) U_roll_std_6 - 0.10 0.17 0.19 0.20 0.25 0.30 0.88 0.80 1.00 0.42 0.75 0.74 | 1.00 0.99 1.00 1.00 0.93 1.00 0.98 0.73 1.00 NO2(ppm) roll std 6 - 0.11 0.16 0.09 0.20 0.23 0.34 0.37 0.71 0.61 0.74 0.37 1.00 1.00 0.96 1.00 0.77 0.91 1.00 1.00 0.88 0.81 0.91 0.84 - 0.8 0.80 1.00 0.74 0.91 0.87 0.74 0.64 0.83 V_roll_std_6 - 0.09 0.14 0.13 0.23 0.24 0.23 0.29 0.63 0.91 0.99 hour_sin **-** 0.15 0.24 0.39 0.74 0.87 0.77 1.00 1.00 0.23 0.00 0.00 0.05 0.06 0.20 0.70 0.43 0.36 0.02 0.09 0.21 0.15 0.24 0.34 0.63 0.40 0.42 0.72 0.81 0.97 0.84 1.00 0.95 dayofweek - 0.00 0.00 0.72 0.70 1.00 Ox(ppm) roll std 6 - 0.150.10 0.11 0.18 0.23 0.18 0.15 0.35 0.66 0.78 0.80 0.69 0.80 0.71 0.23 0.74 0.75 0.83 0.17 0.22 0.33 0.06 0.40 0.34 0.66 0.77 U_roll_mean_3 - 0.12 0.13 0.20 0.16 0.11 0.25 0.20 0.37 0.43 0.25 0.31 0.42 0.72 V_roll_mean_3 - 0.10 0.14 0.12 0.17 0.23 0.37 0.72 0.75 0.69 1.00 0.85 Ox(ppm) roll mean 3 - 0.03 0.04 0.07 0.05 0.16 0.15 0.17 0.31 0.43 0.36 0.22 0.17 0.29 0.33 0.33 NO2(ppm) roll mean 3 - 0.09 0.12 0.16 0.18 0.08 0.06 0.14 0.31 0.27 0.12 0.00 0.36 0.67 0.42 0.23 0.21 0.76 0.86 $NO(ppm)_roll_std_6 - 0.07$ 0.05 0.05 0.08 0.16 0.10 0.22 0.34 0.19 0.12 0.40 0.25 0.39 0.17 0.31 0.63 0.78 0.67 0.72 - 0.2 0.10 0.08 0.03 0.19 0.39 0.29 0.20 0.21 0.32 0.32 0.29 0.43 0.76 0.72 Ox(ppm) lag23 - 0.050.00 0.07 0.09 hour_cos - 0.24 0.20 0.17 0.18 0.13 0.03 0.00 0.00 0.00 0.00 0.00 0.07 0.34 0.31 0.81 0.42 0.26 0.00 0.00 0.00 0.06 0.14 0.24 Ox(ppm) lag13 - 0.020.03 0.00 0.00 0.00 0.00 0.11 0.24 0.35 0.10 0.00 0.00 0.18 0.00 0.10 0.00 0.20 0.31 0.14 0.00 0.00 - 0.0 05 00 t+14 t+19 24 0x(ppm)_t+02 0x(ppm)_t+03 0x(ppm)_t+12 0x(ppm)_t+13 0x(ppm)_t+23 Ox(ppm)_t+ Ox(ppm)_t+ Ox(ppm)_t+ Ox(ppm)_t+ Ox(ppm)_t Ox(ppm)_ Forecast Step Normalized Feature Importance (per step) 1.0 0.72 0.71 0.62 0.28 | 0.27 | 0.21 | 0.19 | 0.14 | 0.08 | 0.05 | 0.01 | 0.04 | 0.00 | 0.04 | 0.06 | 0.05 | 0.06 1.00 0.11 0.14 Ox(ppm) 0.23 0.35 0.29 0.40 0.92 0.91 0.69 0.86 0.92 0.85 0.90 0.82 U roll std 6 - 0.00 0.76 0.62 0.79 0.70 0.85 1.00 0.84 0.88 NO2(ppm) roll std 6 - 0.00 0.20 0.07 0.30 0.36 0.69 0.71 0.79 0.97 0.98 0.89 0.93 0.73 0.99 1.00 0.91 0.79 0.77 0.8 0.74 0.19 0.23 0.42 0.42 0.87 0.98 1.00 0.81 0.95 0.71 0.64 0.78 0.73 0.69 0.39 V roll std 6 - 0.00 0.99 1.00 0.85 0.84 0.78 0.35 0.05 0.00 0.18 0.27 0.30 0.39 0.43 0.37 0.34 hour_sin - 0.29 0.71 0.83 0.96 0.74 0.84 0.80 0.95 0.84 0.98 0.98 dayofweek - 0.00 0.15 0.25 0.34 0.74 0.79 0.80 0.74 0.70 0.77 0.89 1.00 1.00 Ox(ppm) roll std 6 - 0.17 0.00 0.09 0.26 0.38 0.40 0.20 0.34 0.71 0.91 0.79 0.77 0.69 0.89 0.38 0.28 0.55 U_roll_mean_3 - 0.00 0.10 0.23 0.23 0.29 0.40 0.35 0.63 0.63 0.77 0.75 0.63 0.72 0.77 1.00 0.89 0.36 0.74 0.84 0.74 1.00 0.75 0.99 0.72 0.74 0.40 0.42 0.33 0.19 0.75 0.89 V roll mean 3 - 0.00 0.27 0.26 0.14 0.26 0.21 0.40 0.76 0.70 1.00 0.85 $Ox(ppm)_roll_mean_3 - 0.00$ $NO2(ppm)_roll_mean_3 - 0.00$ 0.21 0.42 | 0.41 | 0.08 0.29 0.32 0.40 0.40 0.42 0.31 0.90 1.00 0.08 0.20 0.24 0.62 | 0.79 | 0.78 0.79 0.76 0.78 1.00 0.94 1.00 $NO(ppm)_roll_std_6 - 0.00$ - 0.2 0.31 0.32 0.34 0.28 0.30 0.73 0.70 0.68 0.76 0.68 0.77 0.89 1.00 Ox(ppm) lag23 - 0.030.00 0.87 0.74 0.67 0.98 hour_cos - 0.90 0.74 0.71 0.42 0.16 0.11 0.80 0.77 0.74 0.83 1.00 0.84 0.84 0.22 0.00 0.22 0.36 0.22 0.43 0.75 1.00 0.85 $Ox(ppm)_lag13 - 0.00$ 0.20 0.18 0.14 0.37 0.22 0.27 0.34 0.32 0.28 0.24 0.17 0.22 -0.0-09 10 t+12 19 0x(ppm)_t+24

Target

(per feature)

Normalized Importance

step)

Normalized Importance (per