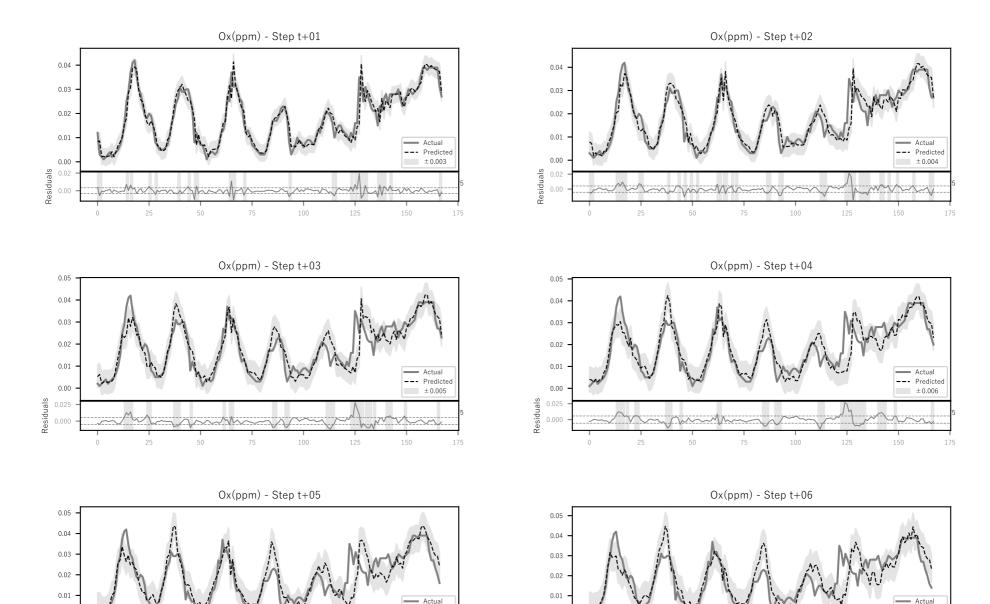
垣生小学校 - オキシダント予測の分析

Model Parameters: Prefecture code: 38 Station code: 38201090 Station name: 垣生小学校 Target item: Ox(ppm) Number of data points in the train set: 13463 Number of data points in the test set: 5770 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_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: 0.9246, MAE: 0.0026, RMSE: 0.0038 Ox(ppm)_t+02 - R2: 0.8346, MAE: 0.0040, RMSE: 0.0057 Ox(ppm)_t+03 - R²: 0.7625, MAE: 0.0050, RMSE: 0.0068 Ox(ppm)_t+04 - R²: 0.6890, MAE: 0.0058, RMSE: 0.0077 Ox(ppm) t+05 - R²: 0.6303, MAE: 0.0063, RMSE: 0.0084 Ox(ppm)_t+06 - R²: 0.5729, MAE: 0.0069, RMSE: 0.0091 Ox(ppm) t+07 - R²: 0.5370, MAE: 0.0072, RMSE: 0.0094 Ox(ppm)_t+08 - R²: 0.4886, MAE: 0.0075, RMSE: 0.0099 Ox(ppm)_t+09 - R²: 0.4479, MAE: 0.0078, RMSE: 0.0103 Ox(ppm)_t+10 - R²: 0.4173, MAE: 0.0080, RMSE: 0.0106 Ox(ppm)_t+11 - R²: 0.3886, MAE: 0.0082, RMSE: 0.0108 Ox(ppm) t+12 - R²: 0.3799, MAE: 0.0083, RMSE: 0.0109 Ox(ppm) t+13 - R²: 0.3616, MAE: 0.0084, RMSE: 0.0111 Ox(ppm)_t+14 - R2: 0.3596, MAE: 0.0084, RMSE: 0.0111 Ox(ppm)_t+15 - R²: 0.3403, MAE: 0.0086, RMSE: 0.0112 Ox(ppm)_t+16 - R²: 0.3380, MAE: 0.0086, RMSE: 0.0113 Ox(ppm) t+17 - R²: 0.3388, MAE: 0.0087, RMSE: 0.0113 Ox(ppm)_t+18 - R²: 0.3339, MAE: 0.0087, RMSE: 0.0113 Ox(ppm)_t+19 - R2: 0.3474, MAE: 0.0086, RMSE: 0.0112 Ox(ppm) t+20 - R²: 0.3455, MAE: 0.0086, RMSE: 0.0112 Ox(ppm)_t+21 - R²: 0.3454, MAE: 0.0086, RMSE: 0.0112 Ox(ppm) t+22 - R²: 0.3303, MAE: 0.0087, RMSE: 0.0113 Ox(ppm)_t+23 - R²: 0.3377, MAE: 0.0087, RMSE: 0.0113 Ox(ppm)_t+24 - R²: 0.3421, MAE: 0.0087, RMSE: 0.0112



0.00

Residuals

--- Predicted

± 0.007

175

150

100

125

--- Predicted

± 0.006

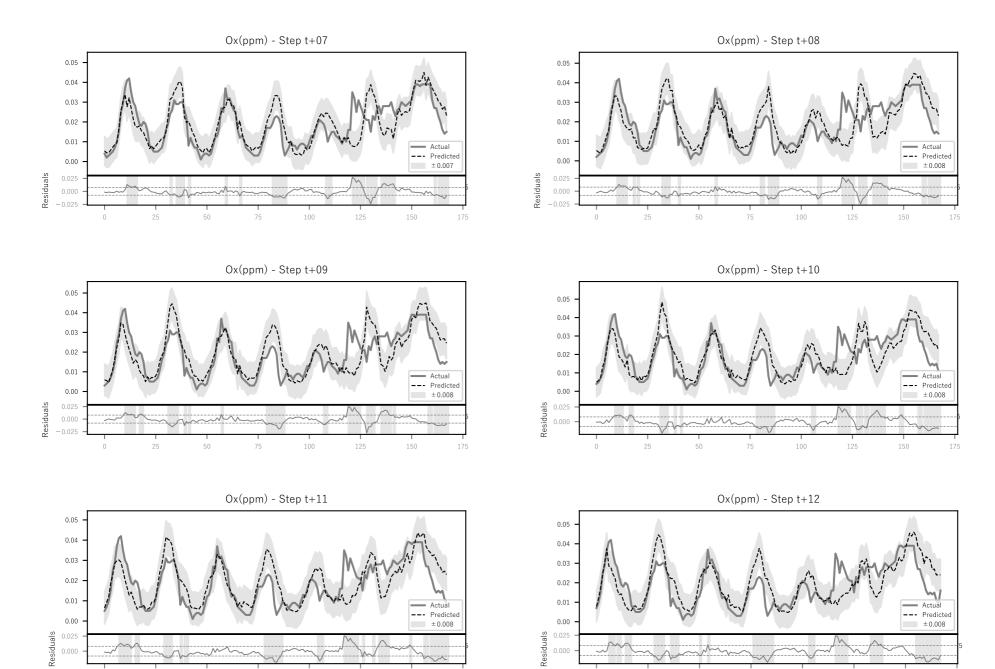
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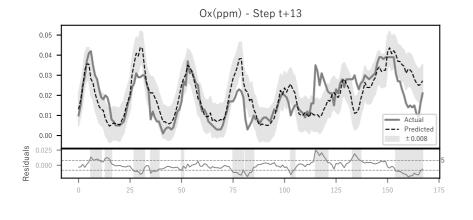
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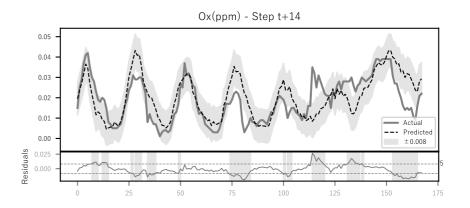
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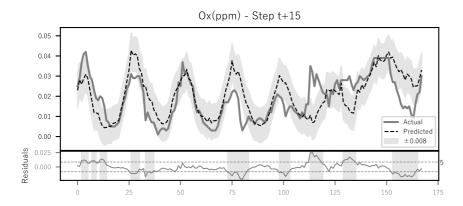
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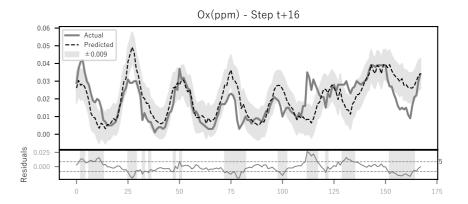
Residuals 0.000

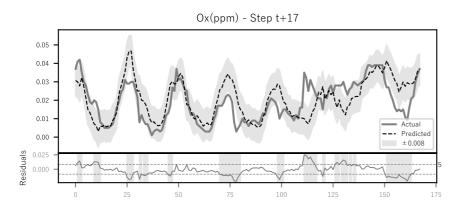


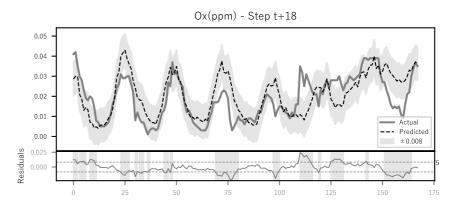


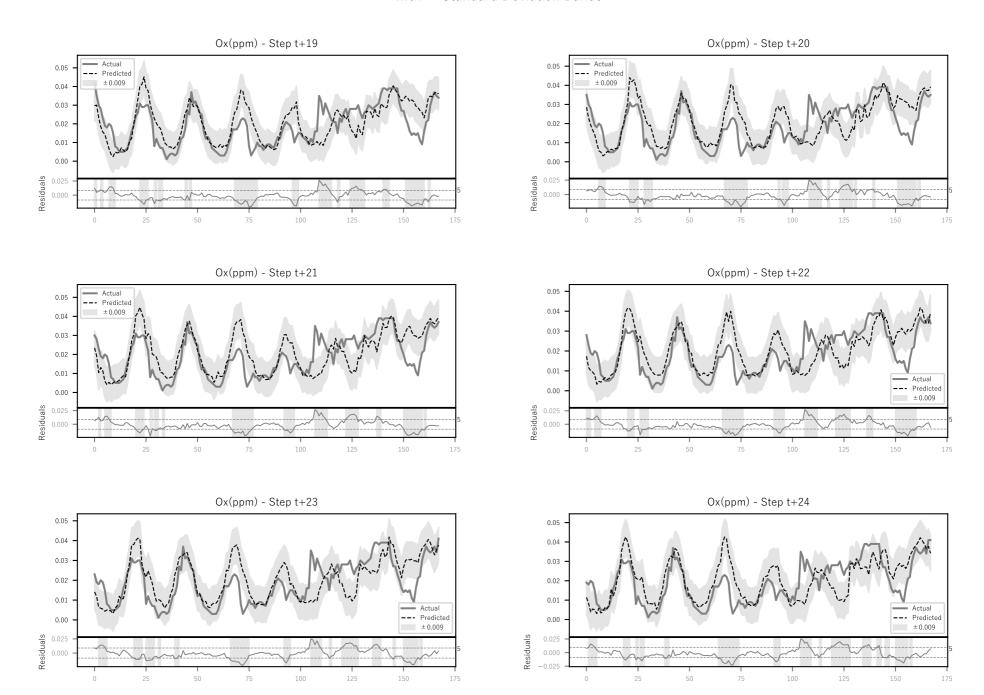


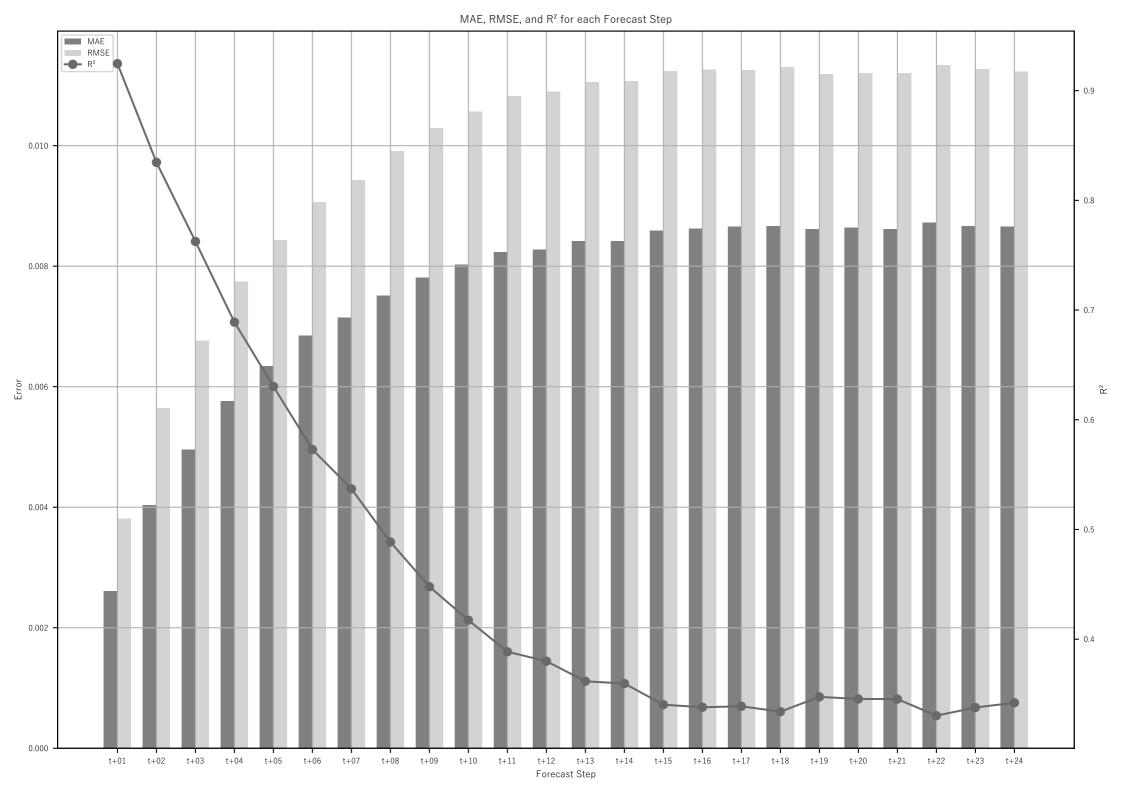












Normalized Feature Importance (per feature) 1.0 0.49 0.40 0.21 0.24 0.31 - 1.00 1.00 1.00 1.00 1.00 1.00 | 1.00 1.00 1.00 0.85 0.82 0.79 0.93 0.64 | 0.60 | 0.60 0.41 Ox(ppm) dayofweek - 0.00 0.01 0.04 0.08 0.07 0.15 0.10 0.26 0.33 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 NO2(ppm) roll std 6 - 0.07 0.14 0.15 0.08 0.27 0.23 0.31 0.42 0.70 0.73 0.78 0.96 0.90 0.87 0.91 0.92 0.89 0.79 - 0.8 0.62 0.67 0.84 1.00 1.00 1.00 0.99 0.00 0.08 0.22 0.39 0.70 0.24 0.00 0.00 0.29 0.36 0.39 $hour_sin - 0.01$ 0.83 V roll std 6 - 0.07 0.11 0.14 0.14 0.22 0.24 0.13 0.22 0.39 0.80 0.75 0.71 0.68 0.14 0.02 0.39 0.37 0.71 0.66 0.72 0.55 0.56 | 0.74 V roll mean 3 - 0.09 0.15 0.06 0.14 0.18 0.03 0.30 0.36 U_roll_std_6 - 0.07 0.10 0.14 0.11 0.20 0.12 0.13 0.30 0.39 0.37 0.40 0.34 0.17 0.01 0.09 0.42 0.41 0.24 0.35 0.25 0.40 0.54 0.39 0.38 Ox(ppm) roll std 6 - 0.13 0.22 0.19 0.08 0.30 0.33 0.33 0.19 0.21 0.14 0.00 0.00 0.00 0.17 0.76 0.86 0.83 0.38 0.17 0.00 0.00 hour_cos **-** 0.25 0.34 0.09 Ox(ppm) roll mean 3 - 0.00 0.00 0.01 0.00 0.10 0.01 0.09 0.14 0.29 0.35 0.43 0.42 0.38 0.69 0.31 NO2(ppm) roll mean 3 - 0.07 0.05 0.00 0.03 0.14 0.06 0.06 0.07 0.21 0.42 0.36 0.32 0.30 0.43 0.38 0.43 0.32 U_roll_mean_3 - 0.19 0.24 0.20 0.22 0.15 0.11 0.02 0.01 0.21 0.35 0.22 0.35 0.27 0.30 0.19 0.26 0.35 0.21 0.25 0.07 0.24 0.42 0.36 0.27 - 0.2 0.39 0.28 0.24 0.23 0.20 0.23 0.33 0.24 0.16 0.04 0.08 0.20 0.01 0.00 0.00 0.00 0.07 0.08 0.34 0.20 0.00 0.02 $Ox(ppm)_lag23 - 0.03$ 0.03 0.12 0.09 0.00 0.00 0.00 0.00 0.21 0.39 0.16 0.21 0.20 0.14 0.24 0.32 0.38 0.23 0.38 0.36 V - 0.300.37 0.40 0.23 0.20 0.17 0.09 0.15 0.21 0.26 0.03 0.00 0.00 0.03 0.00 0.04 0.24 0.04 0.15 0.11 0.13 0.19 0.17 0.00 - 0.0 t+03 00 Dx(ppm)_t+01 Jx(ppm)_t+02 0x(ppm)_t+12 0x(ppm)_t+13 Ox(ppm)_t+ Ox(ppm)_ Forecast Step Normalized Feature Importance (per step) 1.0 $0.50 \quad 0.48 \quad 0.46 \quad 0.50 \quad 0.43 \quad 0.42 \quad 0.35 \quad 0.26 \quad 0.22 \quad 0.18 \quad 0.16 \quad 0.11 \quad 0.13 \quad 0.13 \quad 0.09 \quad 0.10 \quad 0.06 \quad 0.01 \quad 0.00 \quad 0.00 \quad 0.07 \quad 0.15$ 1.00 Ox(ppm) 0.33 0.40 0.71 0.69 0.80 0.83 0.86 0.93 dayofweek - 0.00 0.08 0.16 0.25 0.23 0.35 0.40 0.76 0.71 0.79 1.00 0.76 0.87 0.90 NO2(ppm) roll std 6 - 0.000.22 0.22 0.17 0.63 0.74 0.73 0.80 0.81 0.75 0.72 1.00 0.87 0.88 0.70 0.65 0.8 0.84 0.23 0.42 0.65 0.95 0.92 0.87 0.92 0.92 0.81 0.66 0.34 0.10 0.00 0.19 0.33 0.42 hour sin - 0.06 1.00 0.24 0.34 0.77 0.75 0.74 0.80 0.80 0.90 0.93 V roll std 6 - 0.00 0.18 0.60 0.67 0.82 0.68 0.58 1.00 0.84 0.84 0.69 1.00 V_roll_mean_3 - 0.04 0.26 0.00 0.29 0.34 0.38 | 0.21 | 0.17 0.32 0.40 0.62 0.74 0.71 0.80 0.84 0.77 0.72 0.74 $U_roll_std_6 - 0.00$ 0.20 0.31 0.36 0.86 0.69 0.77 0.88 0.86 1.00 0.96 $Ox(ppm)_roll_std_6 - 0.26$ 0.40 0.38 0.00 0.38 0.25 0.63 0.16 0.29 0.13 0.85 0.71 0.82 0.82 | 1.00 0.84 0.79 hour cos - 0.85 0.90 1.00 0.81 0.79 0.29 0.02 0.20 0.40 0.96 0.97 0.96 0.81 0.32 0.00 0.03 0.28 $Ox(ppm)_roll_mean_3 - 0.00$ 0.11 0.21 0.28 0.42 0.38 0.58 | 0.64 | 0.79 | 0.77 0.73 | 0.85 0.73 0.74 0.66 0.76 1.00 0.90 $NO2(ppm)_roll_mean_3 - 0.10$ 0.10 0.00 0.25 0.73 0.96 0.84 0.82 0.82 0.72 0.78 0.92 0.70 0.71 1.00 0.78 U_roll_mean_3 - 0.94 1.00 0.66 0.88 0.33 0.61 0.36 0.42 0.37 0.37 0.31 0.41 0.32 0.00 0.32 0.70 - 0.2 0.36 0.30 0.24 0.23 0.19 0.20 0.14 0.09 0.09 0.13 0.03 0.07 0.02 0.00 0.04 0.06 1.00 0.41 0.36 0.40 0.11 $Ox(ppm)_lag23 - 0.00$ 0.08 0.41 0.19 0.33 0.42 0.37 0.58 0.32 0.42 0.39 0.31 0.64 0.86 0.83 0.97 1.00 0.67 0.94 0.82 0.43 1.00 0.42 0.24 0.08 0.11 0.15 0.15 0.13 0.04 0.15 0.18 0.17 0.18 0.14 0.11 0.14 0.00 - 0.0 - 1 10 0x(ppm)_t+24

Target

(per feature)

Normalized Importance

Normalized Importance (per step)