

# 富久町 - オキシダント予測の分析

Model Parameters:  
Prefecture code: 38  
Station code: 38201020  
Station name: 富久町  
Target item: Ox(ppm)  
Number of data points in the train set: 13328  
Number of data points in the test set: 5712  
Forecast horizon (hours): 24  
Number of used features: 141

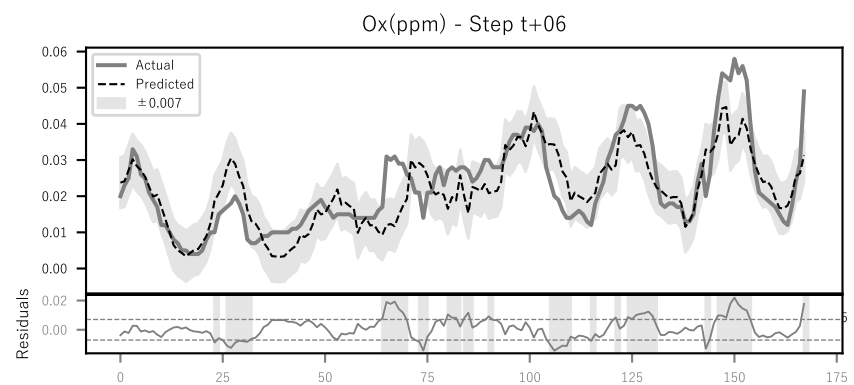
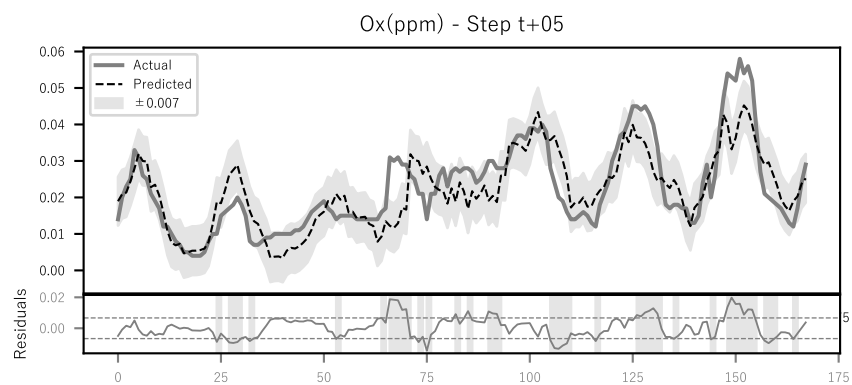
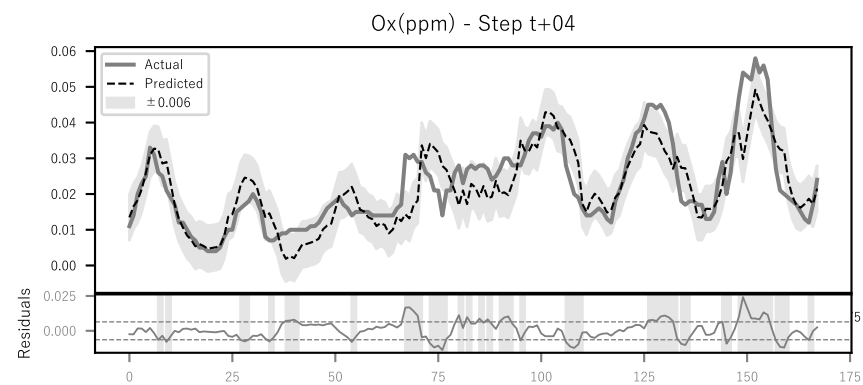
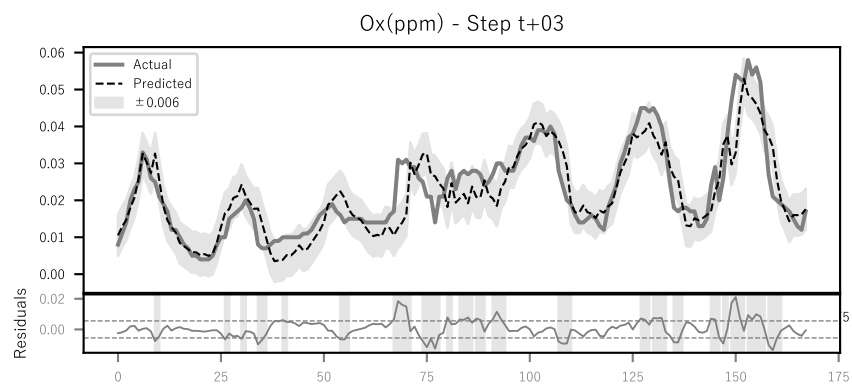
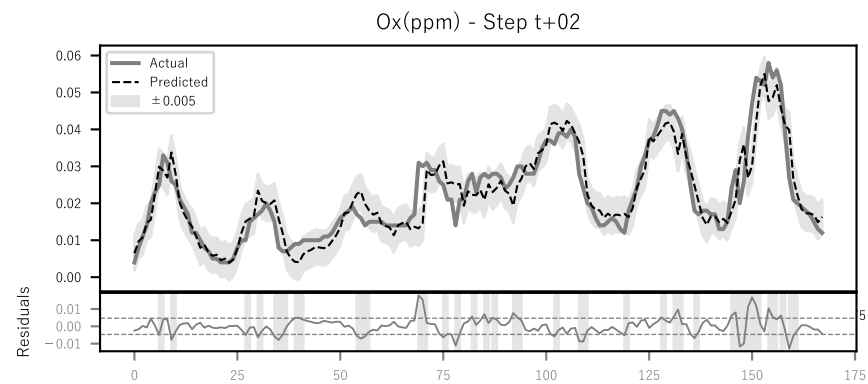
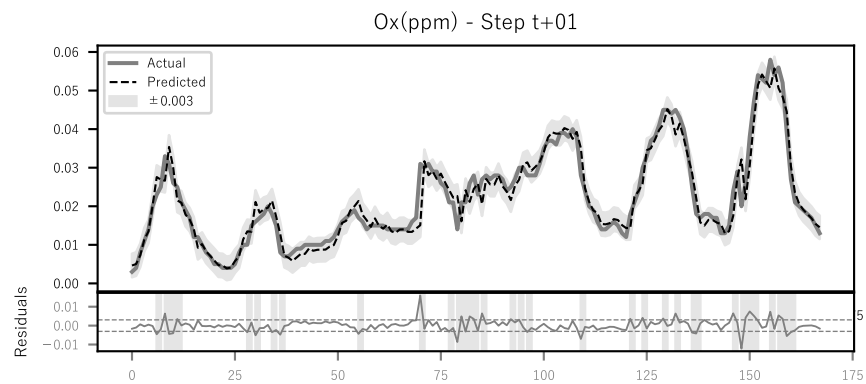
## Features:

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)\_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\_lag9, V\_lag10, V\_lag11, V\_lag12, V\_lag13  
V\_lag14, V\_lag15, V\_lag16, V\_lag17, V\_lag18  
V\_lag19, V\_lag20, V\_lag21, V\_lag22, V\_lag23  
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

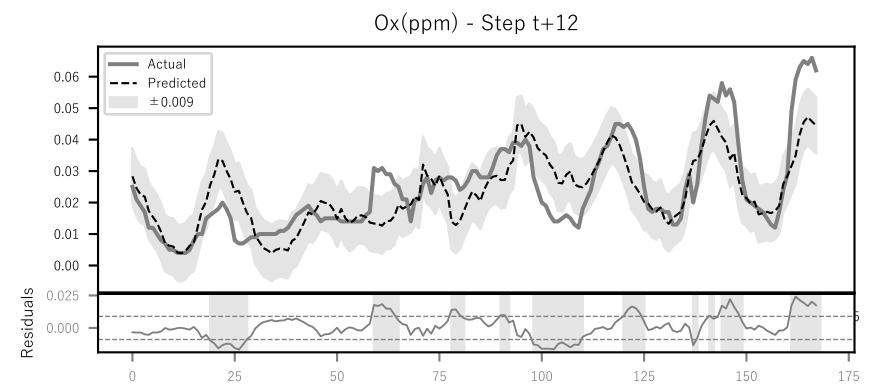
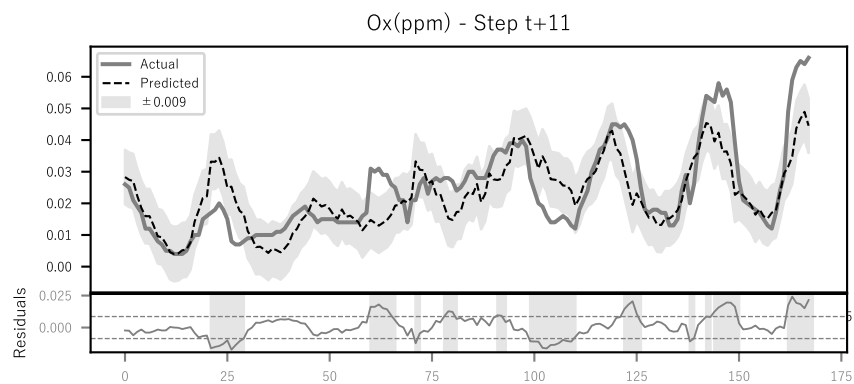
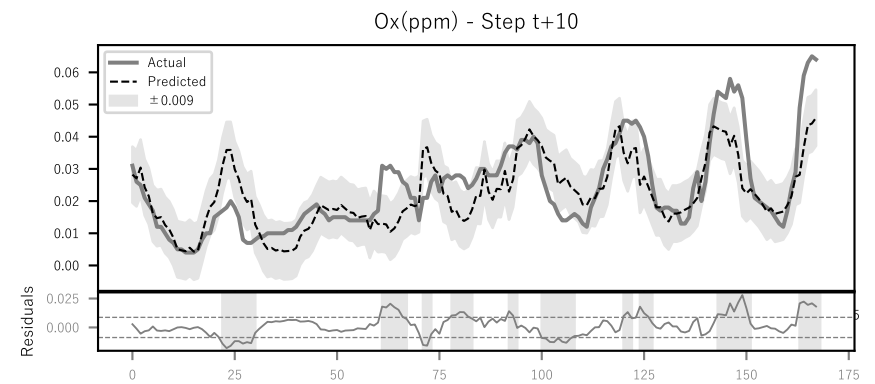
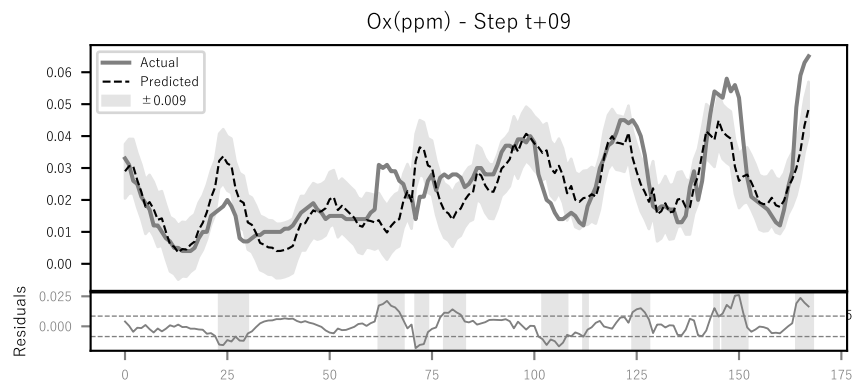
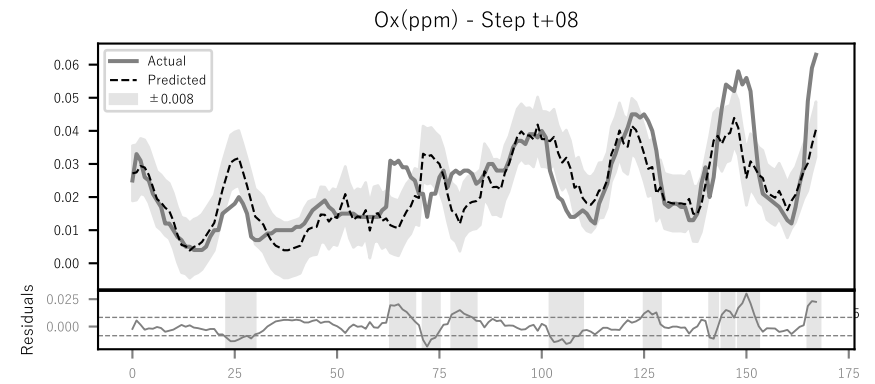
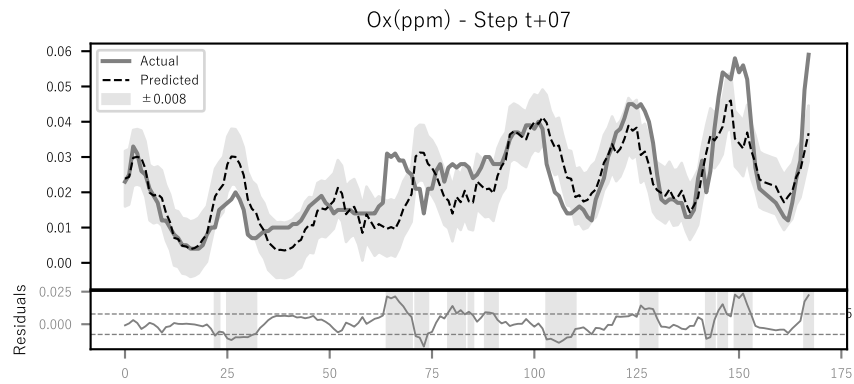
## Metrics per Forecast Step:

Ox(ppm)\_t+01 - R<sup>2</sup>: 0.9119, MAE: 0.0026, RMSE: 0.0038  
Ox(ppm)\_t+02 - R<sup>2</sup>: 0.8237, MAE: 0.0039, RMSE: 0.0054  
Ox(ppm)\_t+03 - R<sup>2</sup>: 0.7506, MAE: 0.0047, RMSE: 0.0065  
Ox(ppm)\_t+04 - R<sup>2</sup>: 0.6863, MAE: 0.0054, RMSE: 0.0073  
Ox(ppm)\_t+05 - R<sup>2</sup>: 0.6333, MAE: 0.0059, RMSE: 0.0078  
Ox(ppm)\_t+06 - R<sup>2</sup>: 0.5771, MAE: 0.0064, RMSE: 0.0084  
Ox(ppm)\_t+07 - R<sup>2</sup>: 0.5464, MAE: 0.0066, RMSE: 0.0087  
Ox(ppm)\_t+08 - R<sup>2</sup>: 0.5028, MAE: 0.0070, RMSE: 0.0091  
Ox(ppm)\_t+09 - R<sup>2</sup>: 0.4702, MAE: 0.0072, RMSE: 0.0094  
Ox(ppm)\_t+10 - R<sup>2</sup>: 0.4441, MAE: 0.0074, RMSE: 0.0097  
Ox(ppm)\_t+11 - R<sup>2</sup>: 0.4239, MAE: 0.0076, RMSE: 0.0098  
Ox(ppm)\_t+12 - R<sup>2</sup>: 0.3992, MAE: 0.0077, RMSE: 0.0100  
Ox(ppm)\_t+13 - R<sup>2</sup>: 0.3903, MAE: 0.0078, RMSE: 0.0101  
Ox(ppm)\_t+14 - R<sup>2</sup>: 0.3802, MAE: 0.0079, RMSE: 0.0102  
Ox(ppm)\_t+15 - R<sup>2</sup>: 0.3727, MAE: 0.0079, RMSE: 0.0103  
Ox(ppm)\_t+16 - R<sup>2</sup>: 0.3626, MAE: 0.0080, RMSE: 0.0103  
Ox(ppm)\_t+17 - R<sup>2</sup>: 0.3580, MAE: 0.0080, RMSE: 0.0104  
Ox(ppm)\_t+18 - R<sup>2</sup>: 0.3574, MAE: 0.0080, RMSE: 0.0104  
Ox(ppm)\_t+19 - R<sup>2</sup>: 0.3473, MAE: 0.0081, RMSE: 0.0105  
Ox(ppm)\_t+20 - R<sup>2</sup>: 0.3418, MAE: 0.0081, RMSE: 0.0105  
Ox(ppm)\_t+21 - R<sup>2</sup>: 0.3467, MAE: 0.0081, RMSE: 0.0105  
Ox(ppm)\_t+22 - R<sup>2</sup>: 0.3435, MAE: 0.0081, RMSE: 0.0105  
Ox(ppm)\_t+23 - R<sup>2</sup>: 0.3419, MAE: 0.0081, RMSE: 0.0105  
Ox(ppm)\_t+24 - R<sup>2</sup>: 0.3381, MAE: 0.0081, RMSE: 0.0105

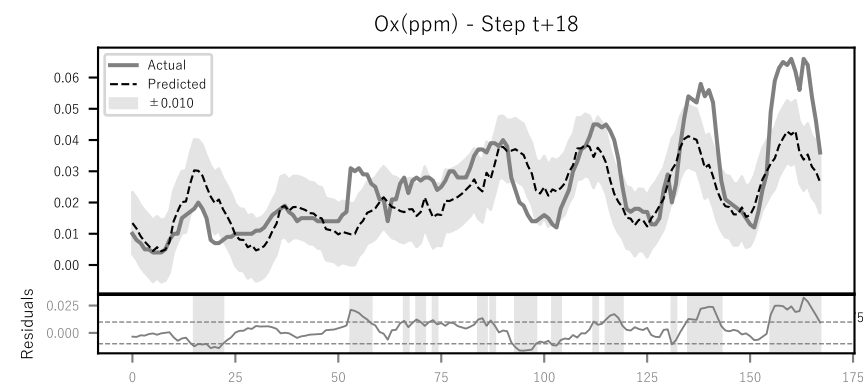
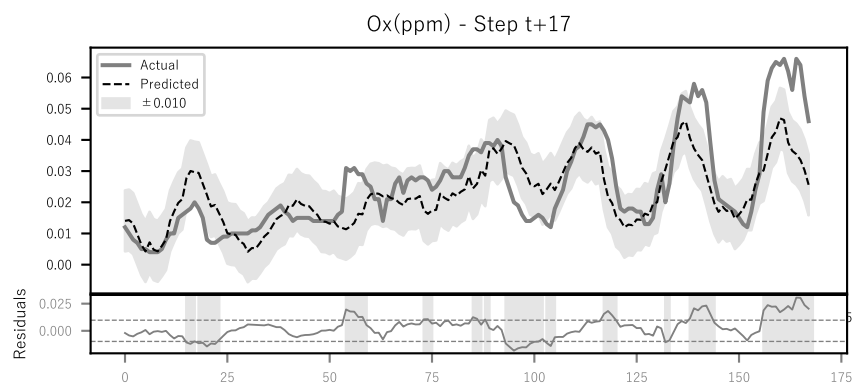
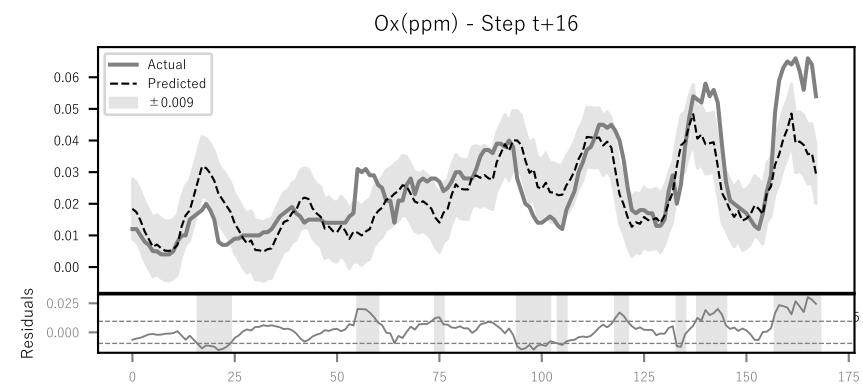
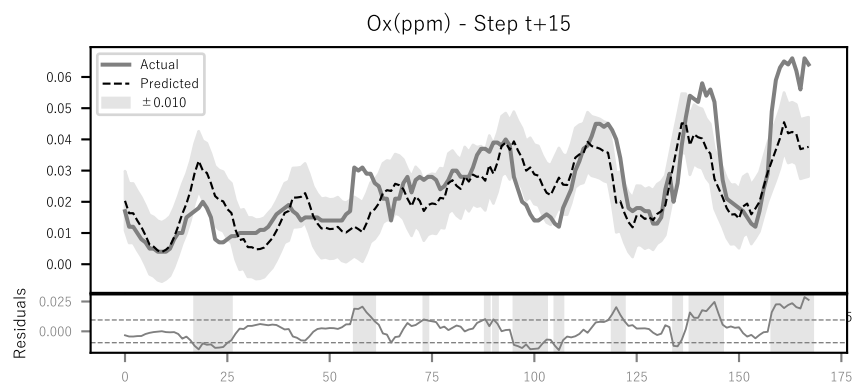
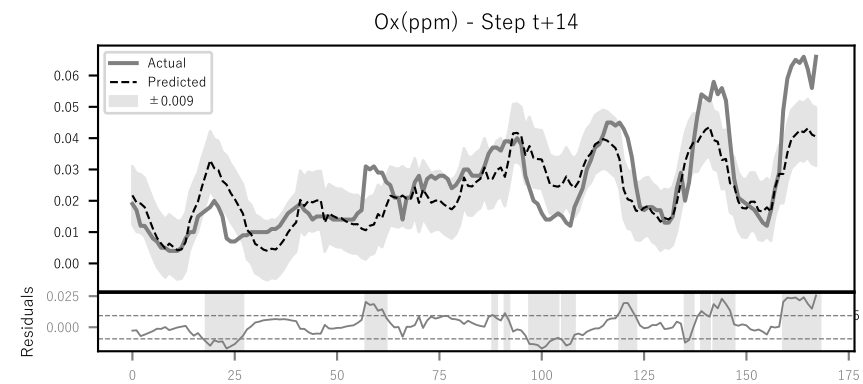
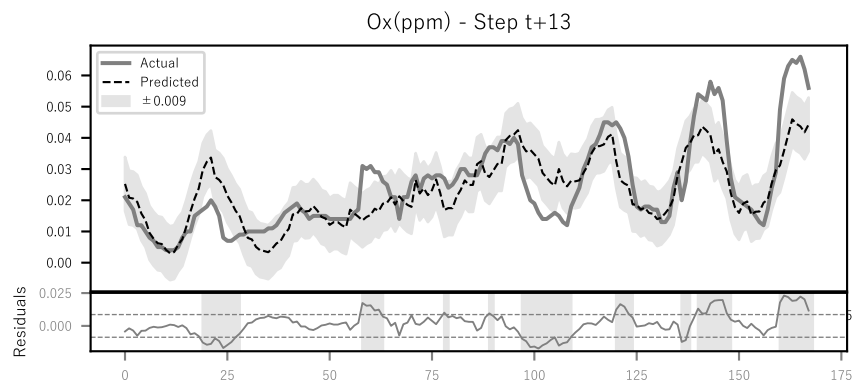
Comparison between actual and predicted values  
with  $\pm$  Standard Deviation Bands



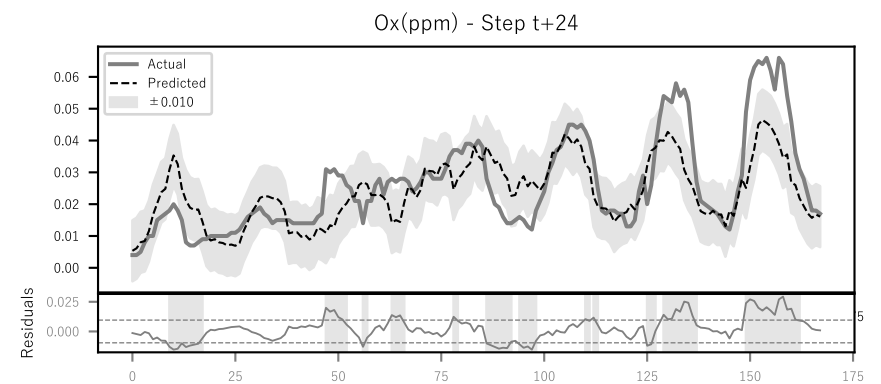
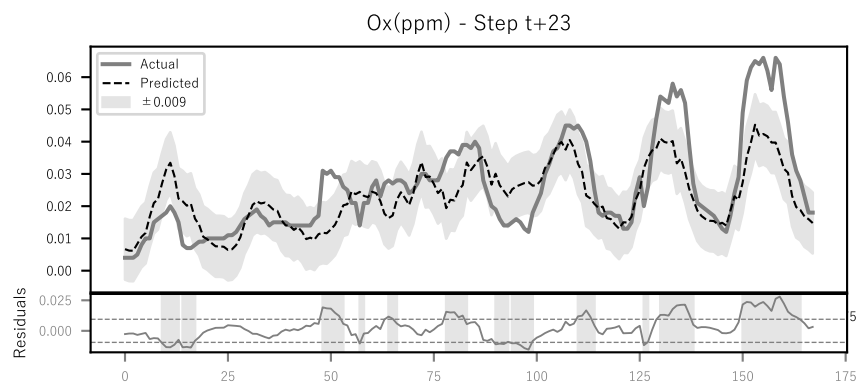
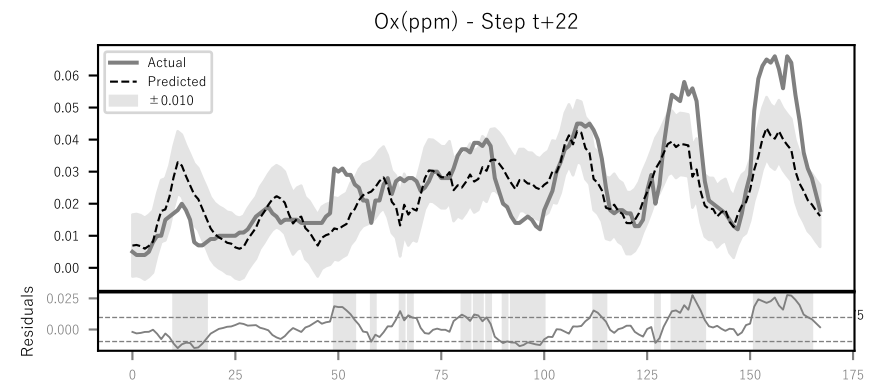
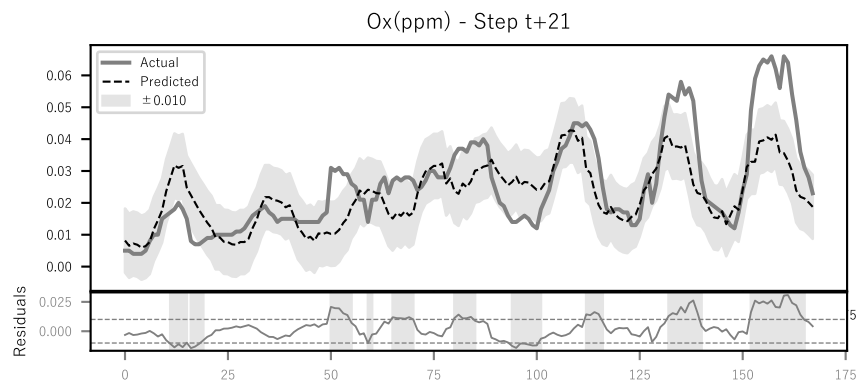
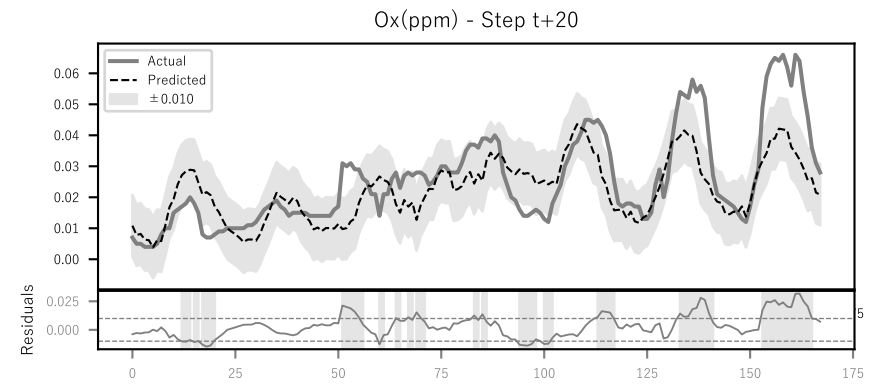
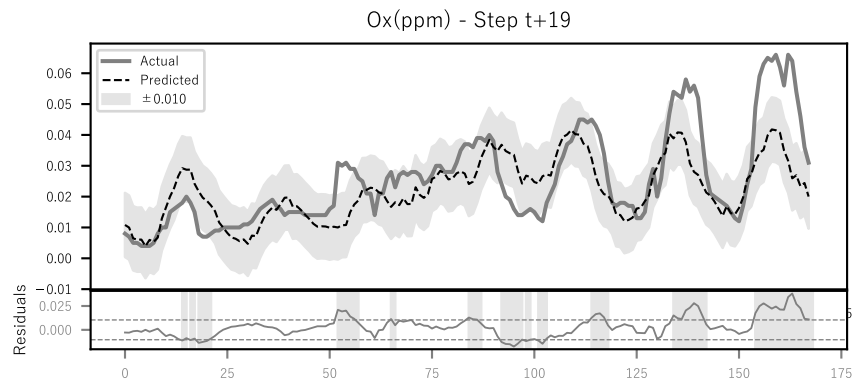
Comparison between actual and predicted values  
with  $\pm$  Standard Deviation Bands



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



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



MAE, RMSE, and R<sup>2</sup> for each Forecast Step