

RNN parameter selection Report - 西条

Prefecture code	38
Station code	38206050
Station name	西条
Target item	Ox(ppm)
Number of data points in the train set	17996
Number of data points in the validation set	4500
Number of features	25
Model	SimpleRNN
Lag (sequence length)	24
Epochs	200
Batch size	128
Learning rate	0.0005
Horizon	24
Hidden size	20
Layers	1
Dropout	0.0
Patience	8
Best val loss	0.019396
R ² (t+1)	0.760557
MAE (t+1)	0.007975
RMSE (t+1)	0.009968
Residual mean	0.000793
Residual median	-0.001229
Residual mode	-0.00644
Predictions mean	0.033
Predictions std	0.012
True mean	0.034
True std	0.02
Residuals std	0.013346
Residuals skew	0.509
Residuals kurtosis	0.139

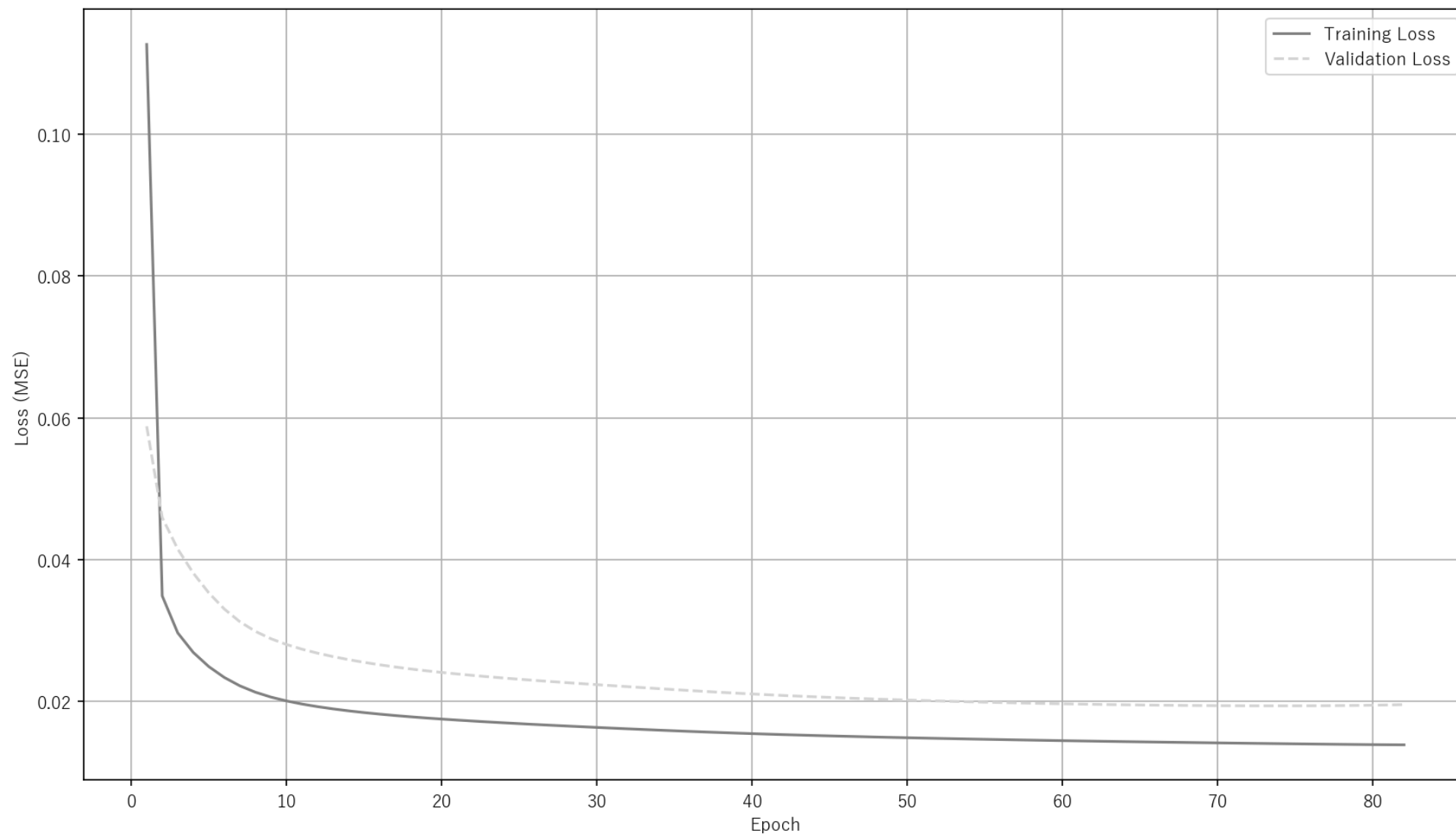
Features used for prediction

NO(ppm)	NO2(ppm)	U	V	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

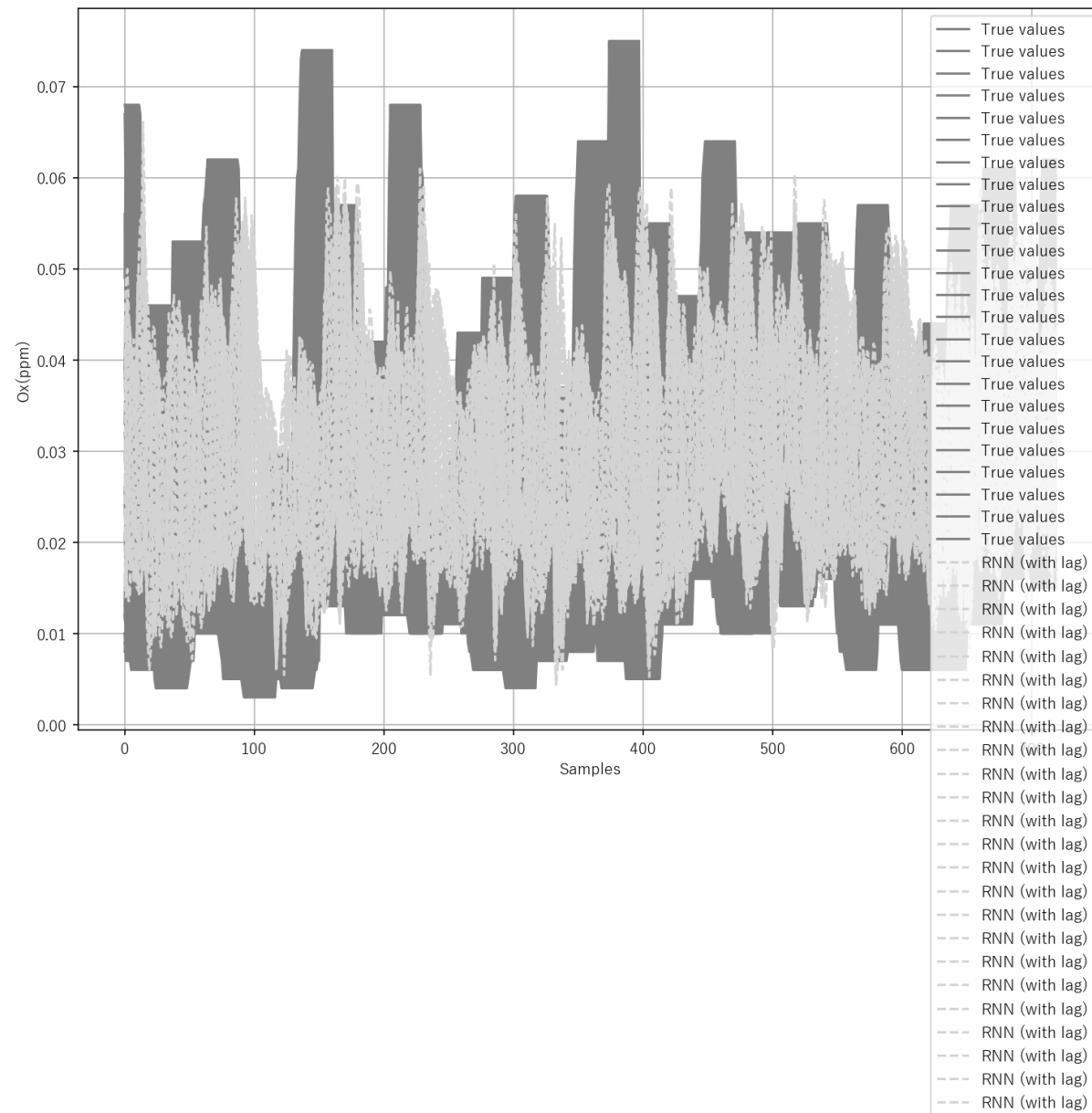
Model accuracy

Target	R ²	MAE	RMSE
Ox(ppm)	0.7606	0.0080	0.0100

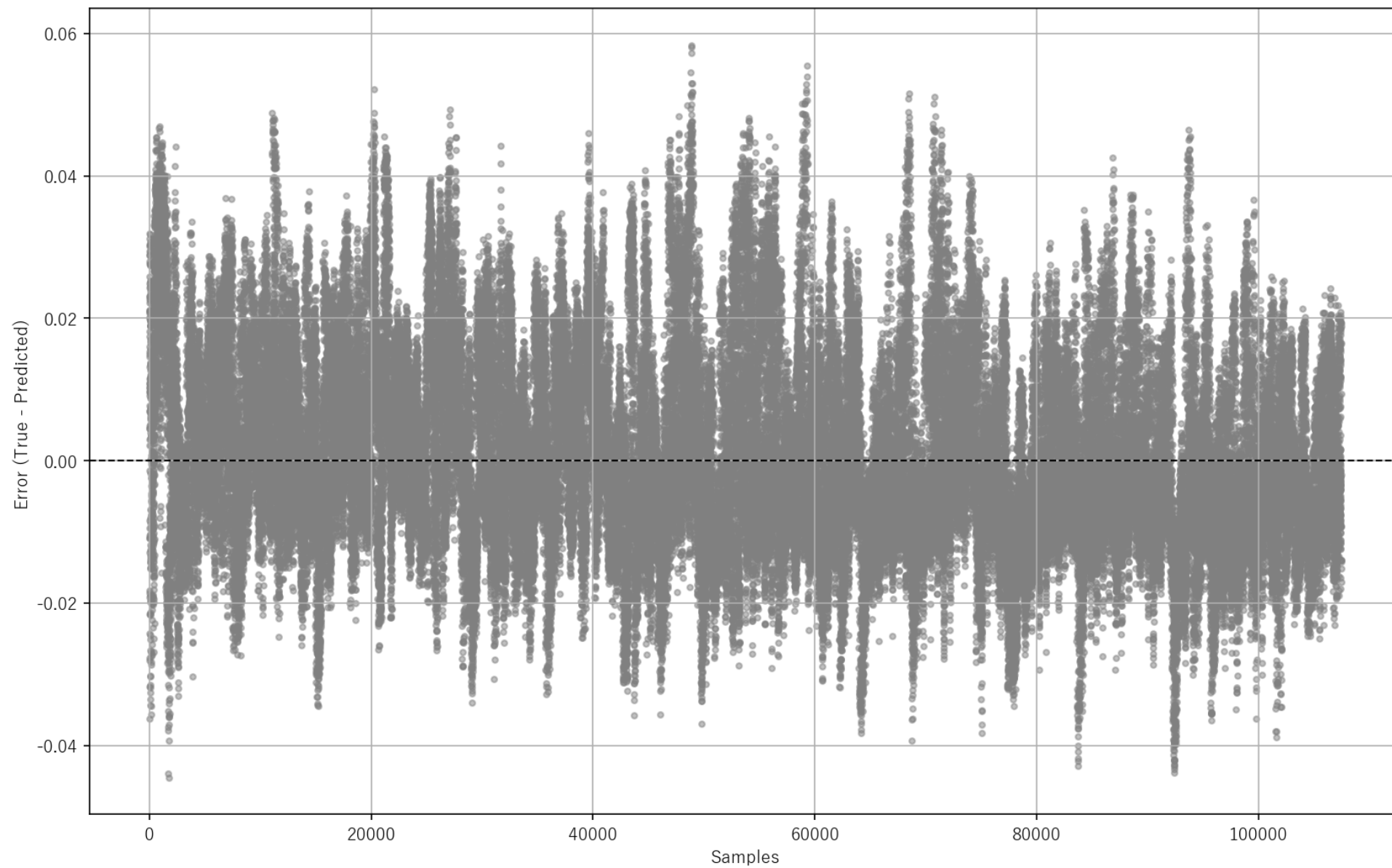
Learning Curve (SimpleRNN)
Best Validation Loss: 0.01940



SimpleRNN Regression
R²: 0.76056



Distribution of Residual Errors



Histogram of Residuals – Distribution & Central Tendency

