

Seasonal Decomposition Report - 西条

$$X_t = T_t + S_t + R_t$$

X_t : observed value of the time series at time t

T_t : trend component (long-term progression of the series)

S_t : seasonal component (repeating short-term pattern)

R_t : residual component (random noise or irregular fluctuations)

In the additive model, the series is assumed to be the sum of these components.

For multiplicative models, the relationship becomes $X_t = T_t \times S_t \times R_t$.

The seasonal decomposition separates the time series into four components:

1. **Original series** — the observed Ox concentration over time.
 2. **Trend component** — shows the long-term direction of variation.
 3. **Seasonal component** — highlights repeating periodic patterns, such as daily or monthly cycles.
 4. **Residual component** — contains random fluctuations not explained by the trend or seasonality.
- By examining these components, we can better understand whether variations in measurement levels are due to systematic seasonal patterns, long-term environmental changes, or random noise.

Prefecture code	38
Station code	38206050
Station name	西条
Model type	Additive decomposition
Period	7.0 days (168 hours)
Data points	22526
Start date	2023-03-01 01:00:00
End date	2025-10-01 00:00:00



