XGBoost Interpolation and IDW - 大阪府 - 2025/5/12 19H

XGBoost + IDW Interpolation

$$\hat{Z}(x) = \hat{Z}_{XGB}(x) + \frac{\sum_{i=1}^{N} \frac{\hat{Z}_{XGB}(x_i)}{d(x, x_i)^p}}{\sum_{i=1}^{N} \frac{1}{d(x, x_i)^p}}$$

$\hat{Z}(x)$: Final estimated Ox at location x

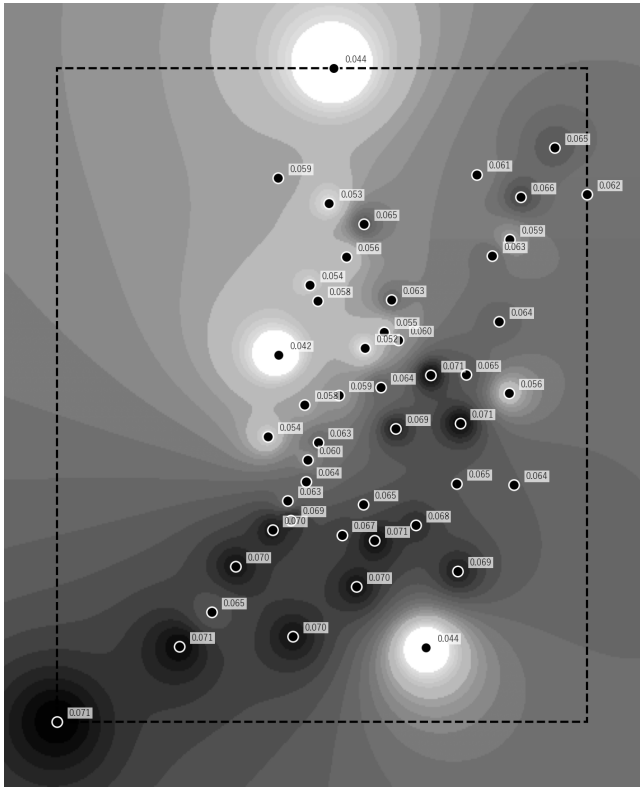
$\hat{Z}_{XGB}(x)$: XGBoost prediction at location x

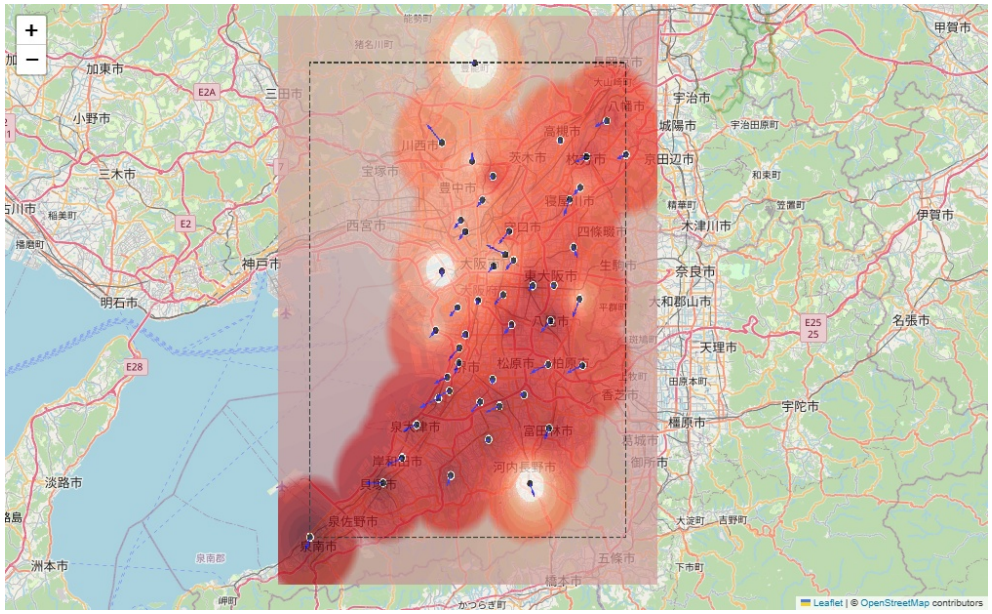
x_i : Monitoring station locations

$d(x, x_i)$: Distance between point x and station i (km)

p : IDW power parameter (commonly 1 ~ 3, here $p = 2$)

The second term is the spatial interpolation (IDW) applied to the XGBoost predictions to add spatial smoothness.





RMSE	MAE	R^2
0.00133	0.00050	0.967