

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

CatBoost + IDW Interpolation

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

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

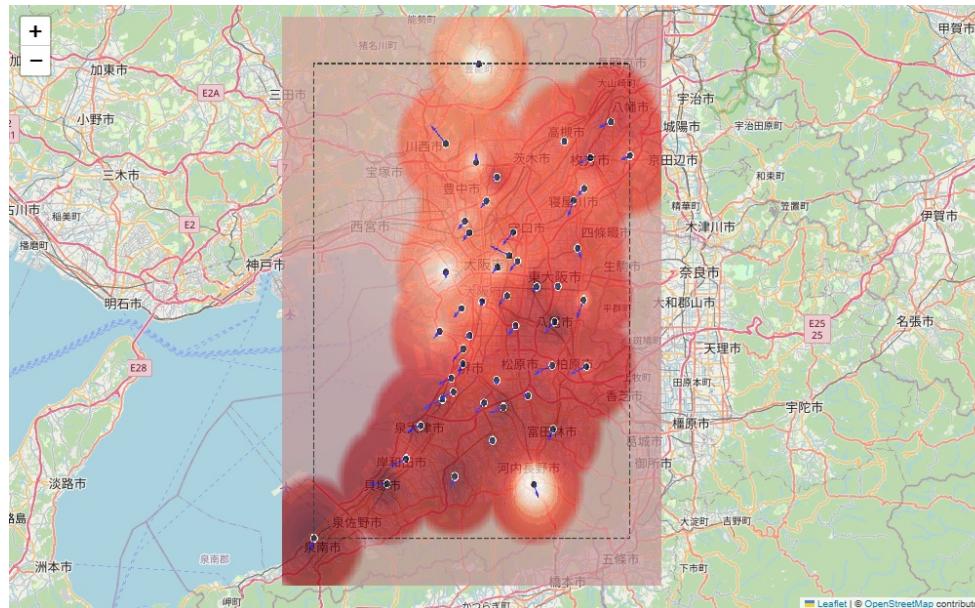
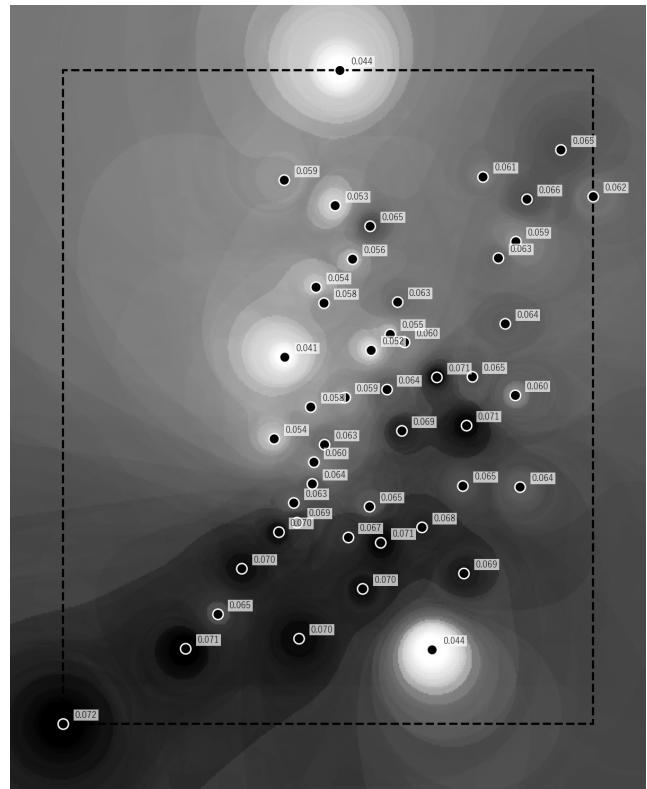
$\hat{Z}_{CAT}(x)$: CatBoost prediction at location x

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 $p = 2$)

IDW adds spatial smoothness to the CatBoost prediction surface.



RMSE	MAE	R ²
0.00482	0.00307	0.564

