Supplement of

Deep-learning spatial principles from deterministic chemical transport models for chemical reanalysis: an application in China for PM$_{2.5}$

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Figure S1 The performance measures as $R^2$ and RMSE of CTM simulations of PM$_{2.5}$ concentration against station measurements at different forecasting lead time in 2019.
Figure S2 Boxplots of correlation coefficients between PM$_{2.5}$ concentrations and four select meteorological variables, all simulated by CTM.
Figure S3 PointConv kernels for PM$_{2.5}$, RH, wind u-component and v-component.
Figure S4 Comparison between fused PM$_{2.5}$ fields and MODIS AOD.
Figure S5 Performance evaluation of the fused PM$_{2.5}$ fields in 2020 using the model trained with the 5-day lead CTM simulations respectively using the LCCV (a) and LSCV (b) methods.
Figure S6 Performance evaluation of the fused PM$_{2.5}$ fields in the national lockdown period of February to April in 2020 (panel a, b) and in the remaining periods (c, d) respectively using the LCCV (a, c) and LSCV (b, d) methods.