**Supplementary Materials:**

**Fig. S1.** The location of the observation site.

**Fig. S2** (a) The $Q_{true}/Q_{expected}$ ratios in different solutions; (b) the $Q_{true}/Q_{expected}$ ratio for different Fpeak value solutions.

**Fig. S3.** Diurnal variations of $O_3$, $NO_x$, and VOCs during the observation period.

**Fig. S4** CPF plots for the seven factors resolved by the multiple PMF methods.

**Fig. S5**. Response of the $P(O_3)$ to different AVOCs and $NO_x$ reduction percentages.

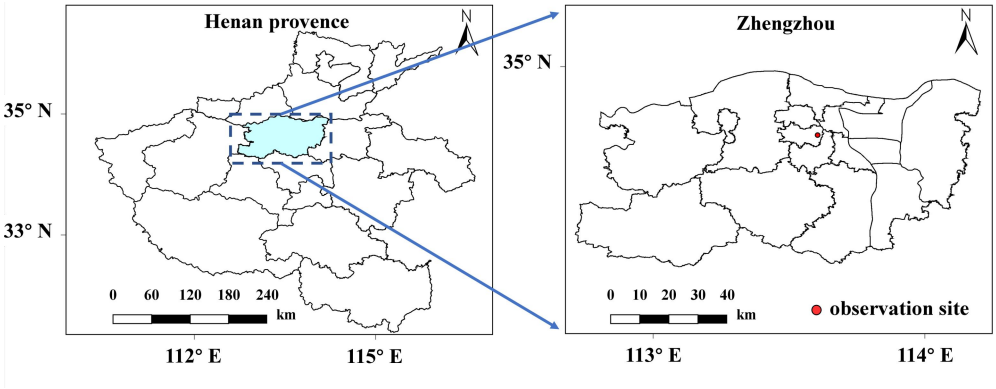



**Fig. S1.** The location of the observation site.

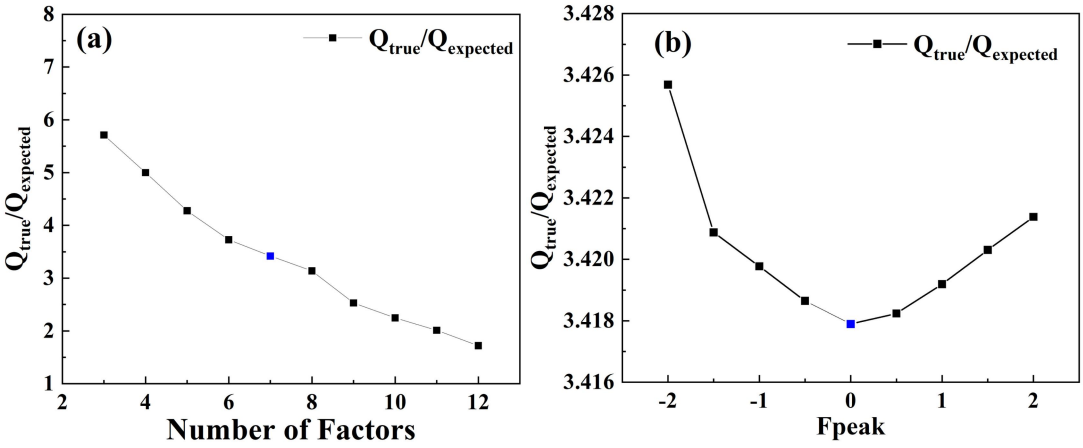



**Fig. S2.** (a) The $Q_{true}/Q_{expected}$ ratios in different solutions; (b) the $Q_{true}/Q_{expected}$ ratio for different Fpeak value solutions.

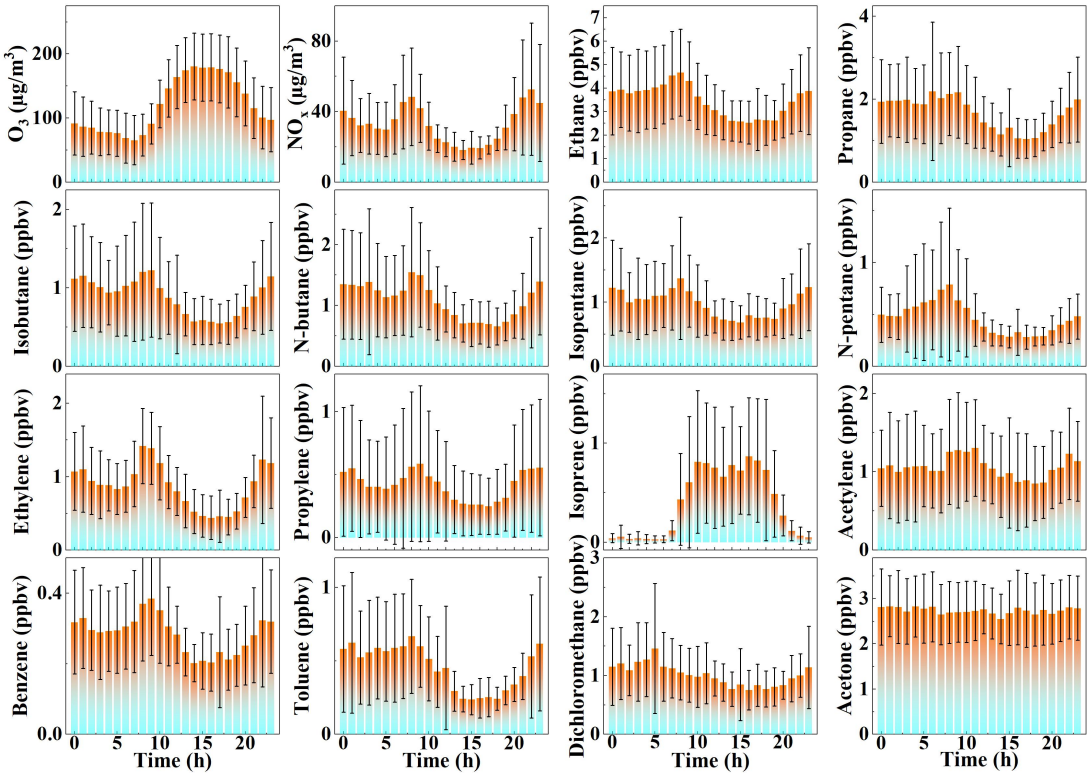



**Fig. S3.** Diurnal variations of $O_3$, $NO_x$, and VOCs during the observation period.

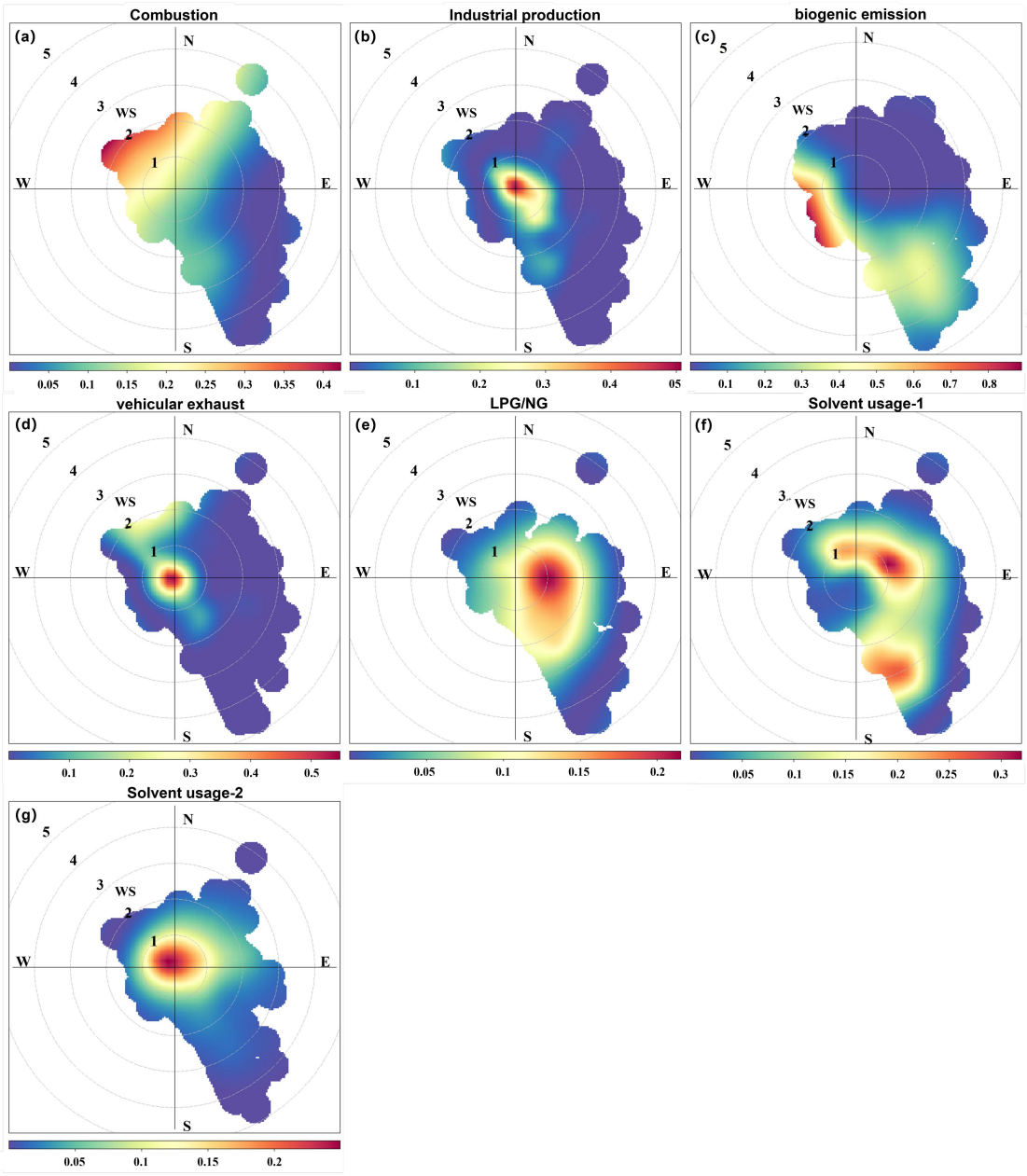
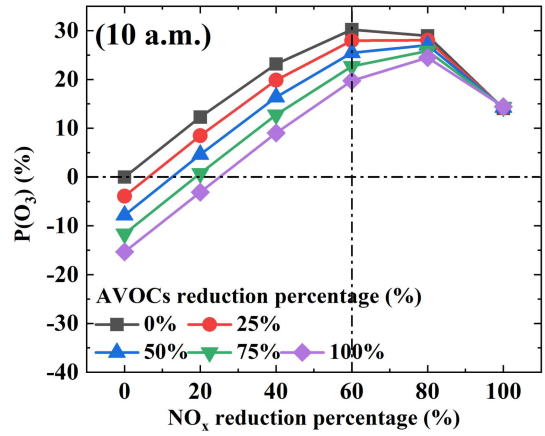
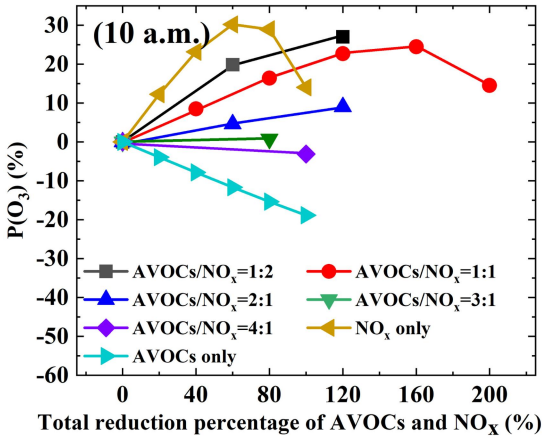
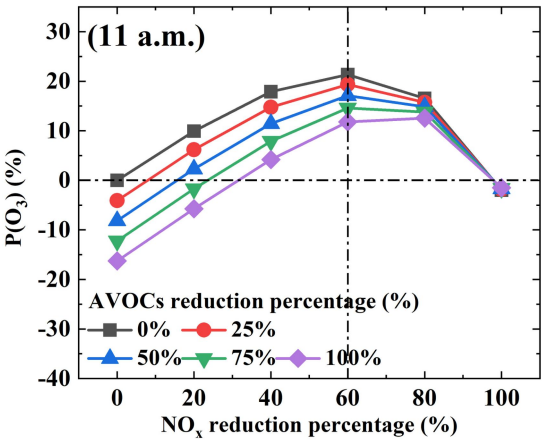
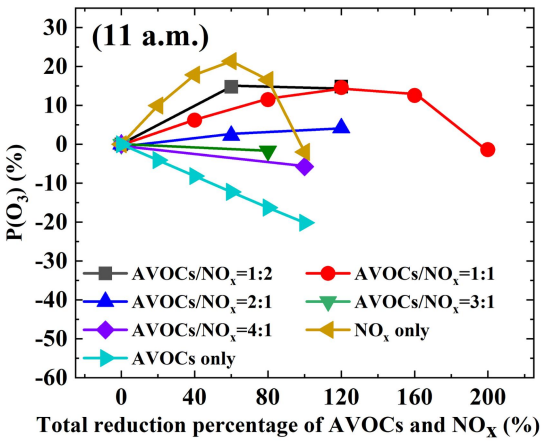


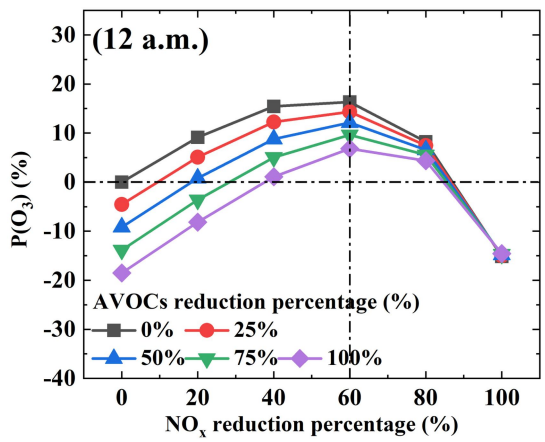

**Fig. S4.** CPF plots for the seven factors resolved by the multiple PMF methods.

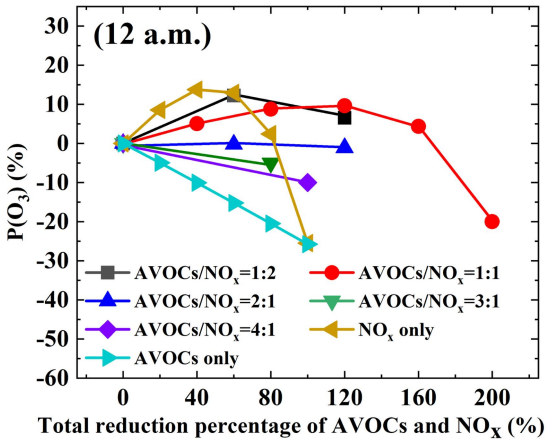

(10 a.m.)
P(O3) (%)
AVOCs reduction percentage (%)
0%
25%
50%
75%
100%
NOx reduction percentage (%)

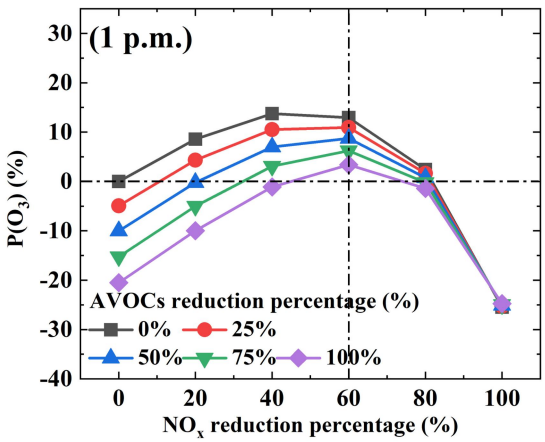

(10 a.m.)
P(O3) (%)
AVOCs/NOx=1:2
AVOCs/NOx=1:1
AVOCs/NOx=2:1
AVOCs/NOx=3:1
AVOCs/NOx=4:1
NOx only
AVOCs only
Total reduction percentage of AVOCs and NOX (%)

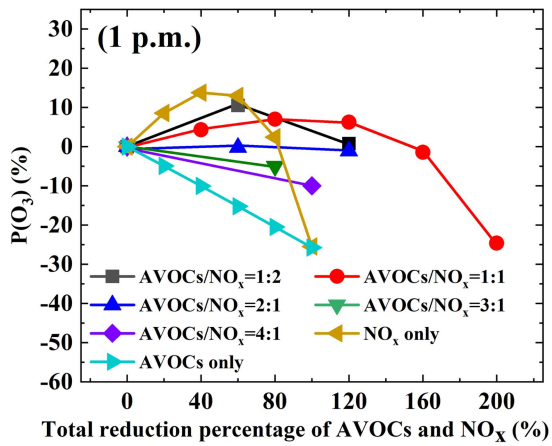

(11 a.m.)
P(O3) (%)
AVOCs reduction percentage (%)
0%
25%
50%
75%
100%
NOx reduction percentage (%)


(11 a.m.)
P(O3) (%)
AVOCs/NOx=1:2
AVOCs/NOx=1:1
AVOCs/NOx=2:1
AVOCs/NOx=3:1
AVOCs/NOx=4:1
NOx only
AVOCs only
Total reduction percentage of AVOCs and NOX (%)


(12 a.m.)
P(O3) (%)
AVOCs reduction percentage (%)
0%
25%
50%
75%
100%
NOx reduction percentage (%)


(12 a.m.)
P(O3) (%)
AVOCs/NOx=1:2
AVOCs/NOx=1:1
AVOCs/NOx=2:1
AVOCs/NOx=3:1
AVOCs/NOx=4:1
NOx only
AVOCs only
Total reduction percentage of AVOCs and NOX (%)


(1 p.m.)
P(O3) (%)
AVOCs reduction percentage (%)
0%
25%
50%
75%
100%
NOx reduction percentage (%)


(1 p.m.)
P(O3) (%)
AVOCs/NOx=1:2
AVOCs/NOx=1:1
AVOCs/NOx=2:1
AVOCs/NOx=3:1
AVOCs/NOx=4:1
NOx only
AVOCs only
Total reduction percentage of AVOCs and NOX (%)

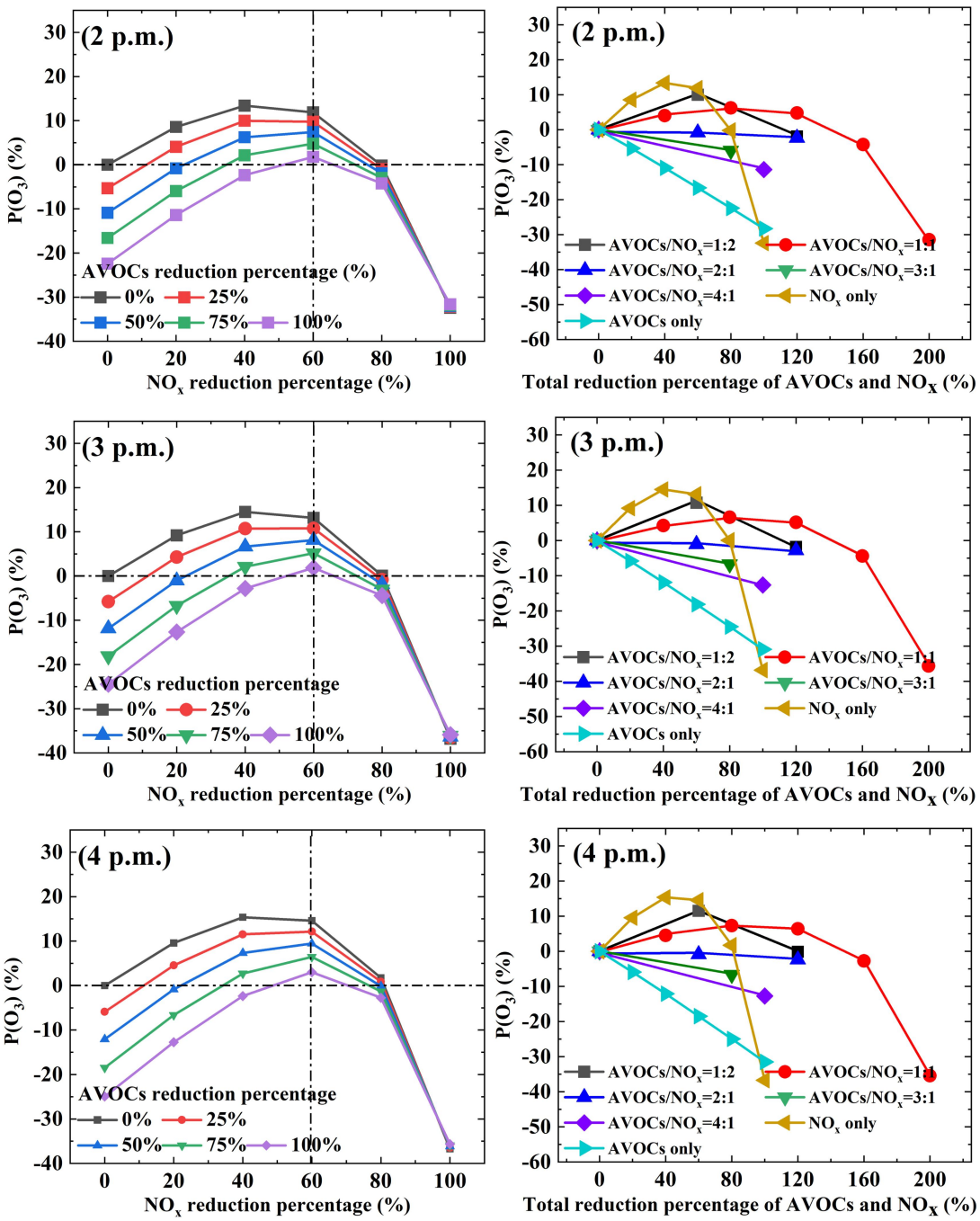



**Fig. S5**. Response of the $P(O_3)$ to different AVOCs and $NO_x$ reduction percentages.