

Supplementary:

Table S1. All the defined haze days and clear days during the whole campaign

Type	Date	Air quality grade	AQI
Haze days	2017.12.24	Medium pollution	168
	2017.12.31	Severe pollution	227
	2018.01.01	Light pollution	108
	2018.01.29	Light pollution	125
	2018.01.30	Severe pollution	234
	2018.02.01	Medium pollution	168
	2018.02.02	Light pollution	141
	2018.02.08	Light pollution	112
	2018.02.10	Light pollution	106
Clear days	2017.12.22	good	94
	2017.12.25	good	81
	2017.12.26	good	62
	2018.01.09	good	53
	2018.01.10	good	61
	2018.01.11	good	64
	2018.01.12	excellent	49
	2018.01.13	good	73
	2018.01.14	excellent	48
	2018.02.03	excellent	46
	2018.02.04	good	51
	2018.02.05	good	74
	2018.02.06	excellent	49
	2018.02.07	excellent	44
	2018.02.11	good	93
	2018.02.12	good	90
	2018.02.13	good	57
	2018.02.16	excellent	41
	2018.02.17	good	59
	2018.02.22	good	65
	2018.02.23	good	70
	2018.02.26	good	55
	2018.03.01	good	96

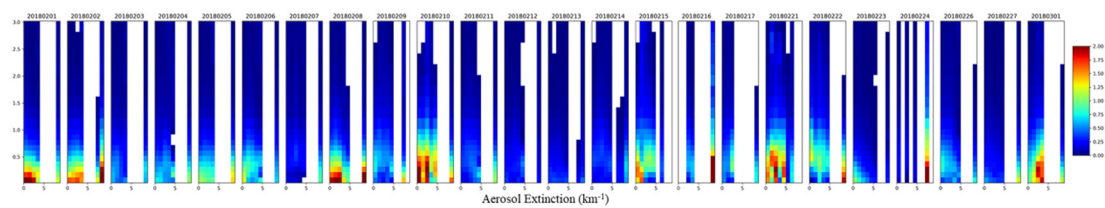


Figure S1. Time series of aerosol extinction vertical profiles during February 2018 retrieved

from MAX-DOAS measurements.

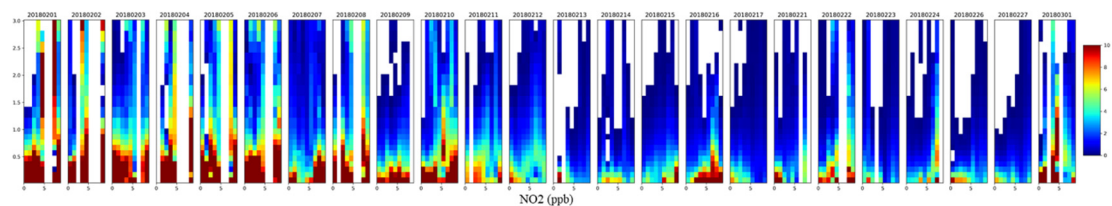


Figure S2. Time series of NO₂ vertical profiles during February 2018 retrieved from MAX-DOAS measurements.

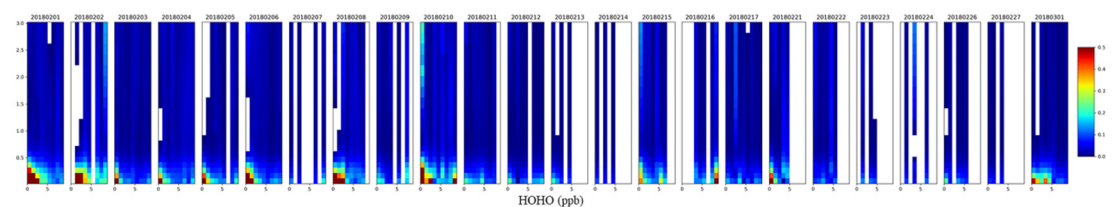


Figure S3. Time series of HONO vertical profiles during February 2018 retrieved from MAX-DOAS measurements.

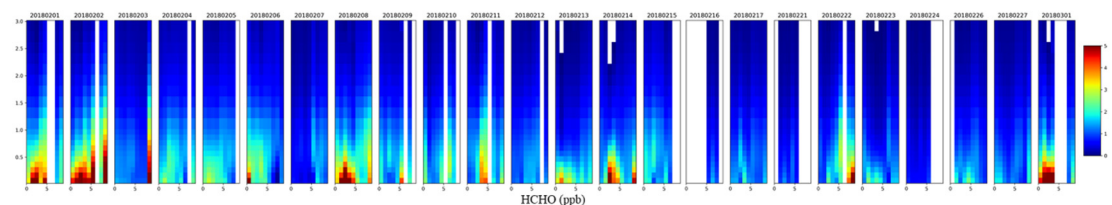


Figure S4. Time series of HCHO vertical profiles during February 2018 retrieved from MAX-DOAS measurements.

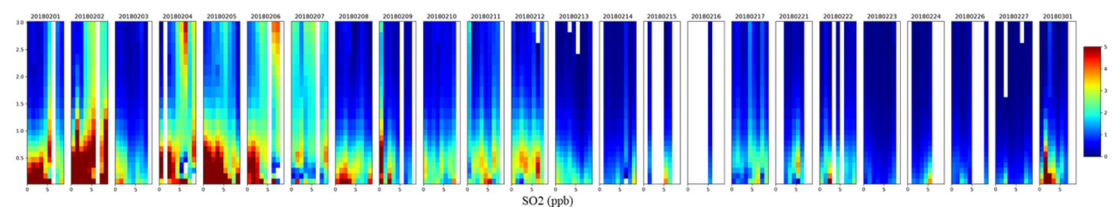


Figure S5. Time series of SO₂ vertical profiles during February 2018 retrieved from MAX-DOAS measurements.

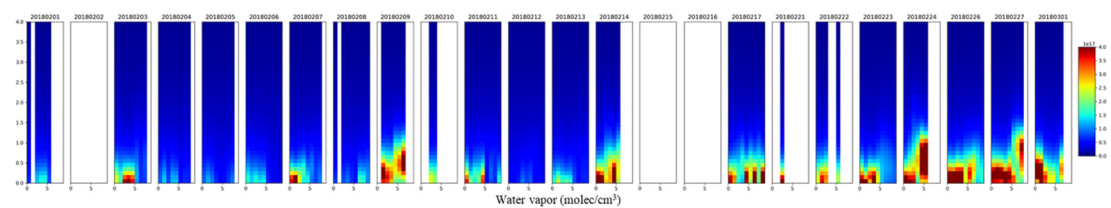


Figure S6. Time series of water vapor vertical profiles during February 2018 retrieved from MAX-DOAS measurements.

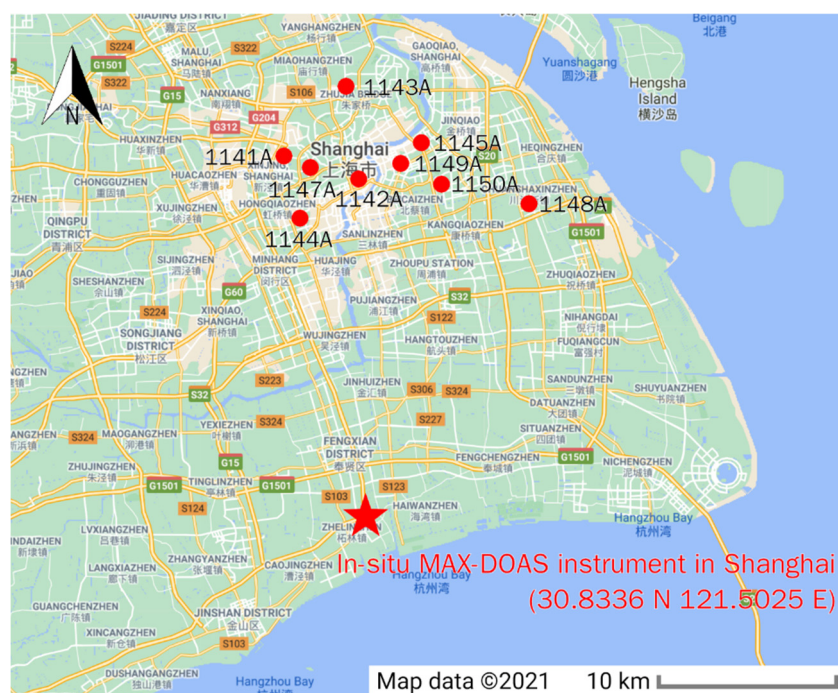


Figure S7. The location of the MAX-DOAS instrument and CNEMC sites in urban Shanghai. The CNEMC sites are far away from the instrument.