

The Development of Boundary Layer Structure Index (BLSI) and Its Relationship with Ground Air Quality

Supplementary Materials:

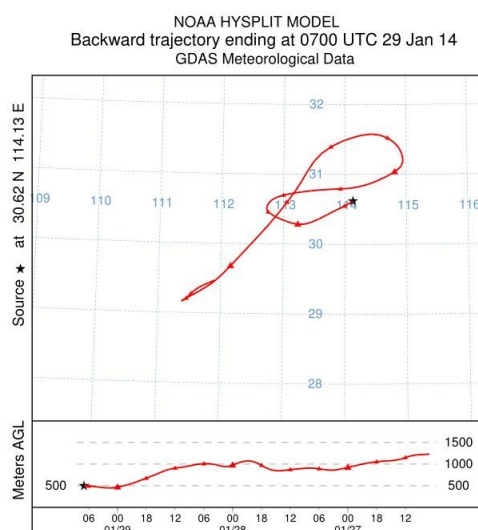
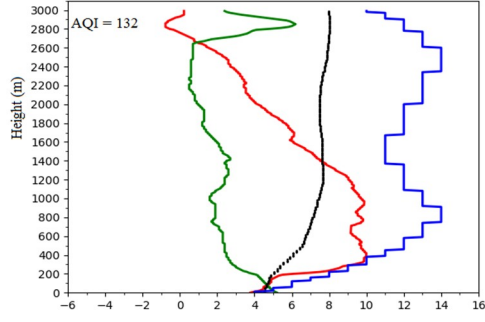
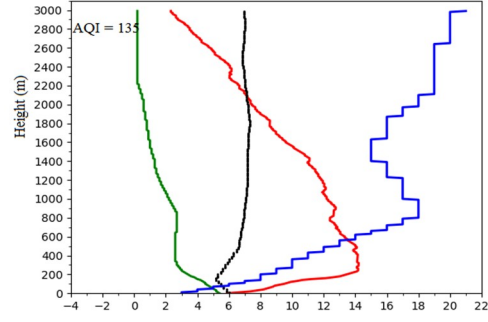


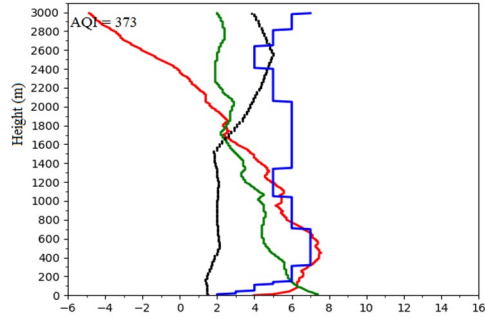
Figure S1. Air mass backward trajectory for 72 h at altitudes of 500m of 29 January 2014.



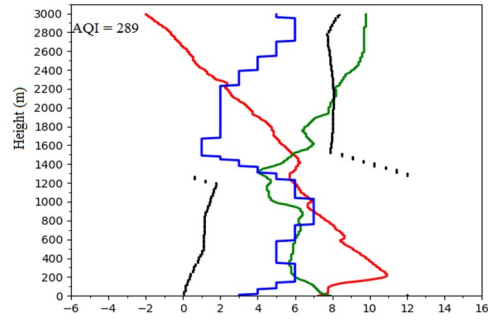
(a) 23 January 2014



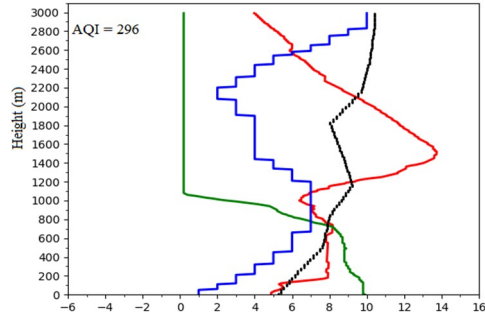
(b) 24 January 2014



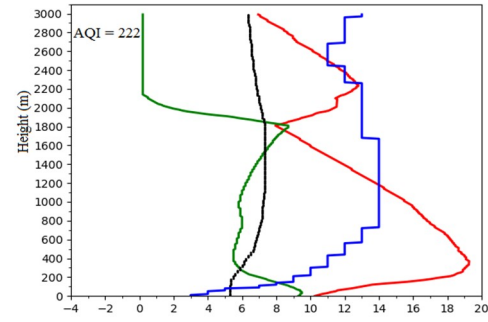
(c) 26 January 2014



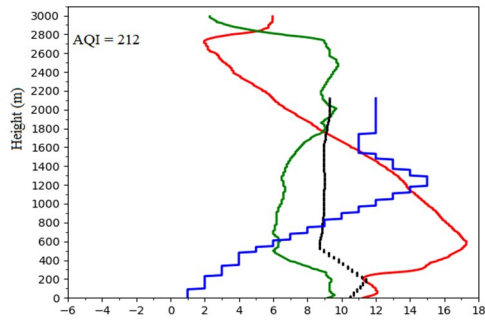
(d) January 2014



(e) 30 January 2014



(f) 31 January 2014



(g) 1 February 2014

Figure S2. Vertical structure of the atmosphere for (a) 23 January 2014, $E_w = 229.39 \text{ J/cm}^2$ (b) 24 January 2014, $E_w = 188.63 \text{ J/cm}^2$ (c) 26 January 2014, $E_w = 163.38 \text{ J/cm}^2$ (d) 28 January 2014, $E_w = 61.75 \text{ J/cm}^2$ (e) 30 January 2014, $E_w = 165.22 \text{ J/cm}^2$ (f) 31 January 2014, $E_w = 199.78 \text{ J/cm}^2$ (g) 1 February 2014, $E_w = 317.76 \text{ J/cm}^2$ in 2014. The line and scatter plot show the profile of temperature (red line, $^{\circ}\text{C}$), relative humidity (green line, %), wind velocity (blue line, m/s), and wind direction (black scatter points, $^{\circ}$) for the heavy pollution period (21 January 2014–4 February 2014). The number on the x-axis is the result after dividing the relative humidity value by 10 and wind direction angle by 30 while temperature and wind speed remain the same.

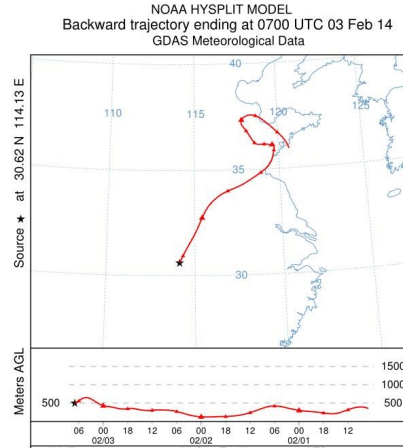


Figure S3. Air mass backward trajectory for 72 h at altitudes of 500m of 3 February 2014.

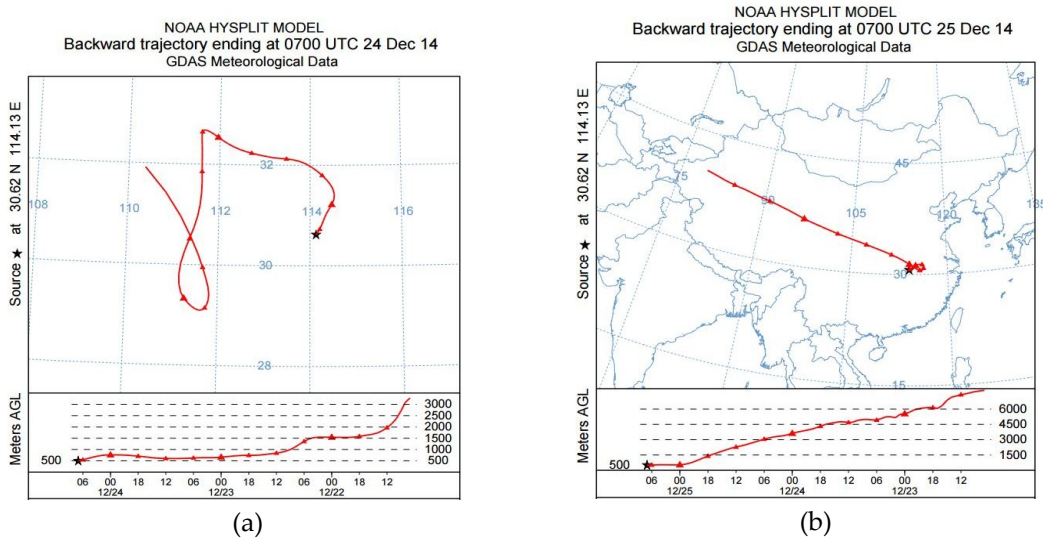


Figure S4. Air mass backward trajectory for 72 h at altitudes of 500m of (a) 24 December 2014 (b) 25 December 2014.

Table S1. Statistical results of H_{ABL} height and inversion layer.

Date	H_{ABL} (m)	Top of the Inversion Layer
21 January 2014	1500	/
22 January 2014	350	350
23 January 2014	400	400
24 January 2014	450	450
25 January 2014	50	1100
26 January 2014	400	450
27 January 2014	250	250
28 January 2014	250	250
29 January 2014	1100	/
30 January 2014	200	750
31 January 2014	300	300
1 February 2014	50	600
2 February 2014	750	700
3 February 2014	900	950
4 February 2014	850	850

note: only the inversion below 1500 m was counted, only the strongest inversion layer was counted, and “/” means no inversion layer.