Supplementary Materials

Enhancements of Airborne Particulate Arsenic over the Subtropical Free Troposphere in the Springtime: Impact by South Asian Biomass Burning

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This “Supplementary Materials” contains four figures. Figure S1 plots time series of daily concentrations of airborne As, Pb, K^+ in TSP samples and CO observed at Mount Hehuan from September 2011 to September 2012. Figure S2 reveals monthly distributions of fire spot counts observed by MODIS over S Asia and SE Asia from September 2011 to September 2012. Figure S3 plots five-day backward trajectory at Mount Hehuan on (a) April 3, 2012 and (b) March 15, 2012. Figure S4 shows the scattered plots of As against Al observed at Mout Hehuan in (a)SA, (b)SEA and (c)other air groups during the S Asian biomass burning seasons.

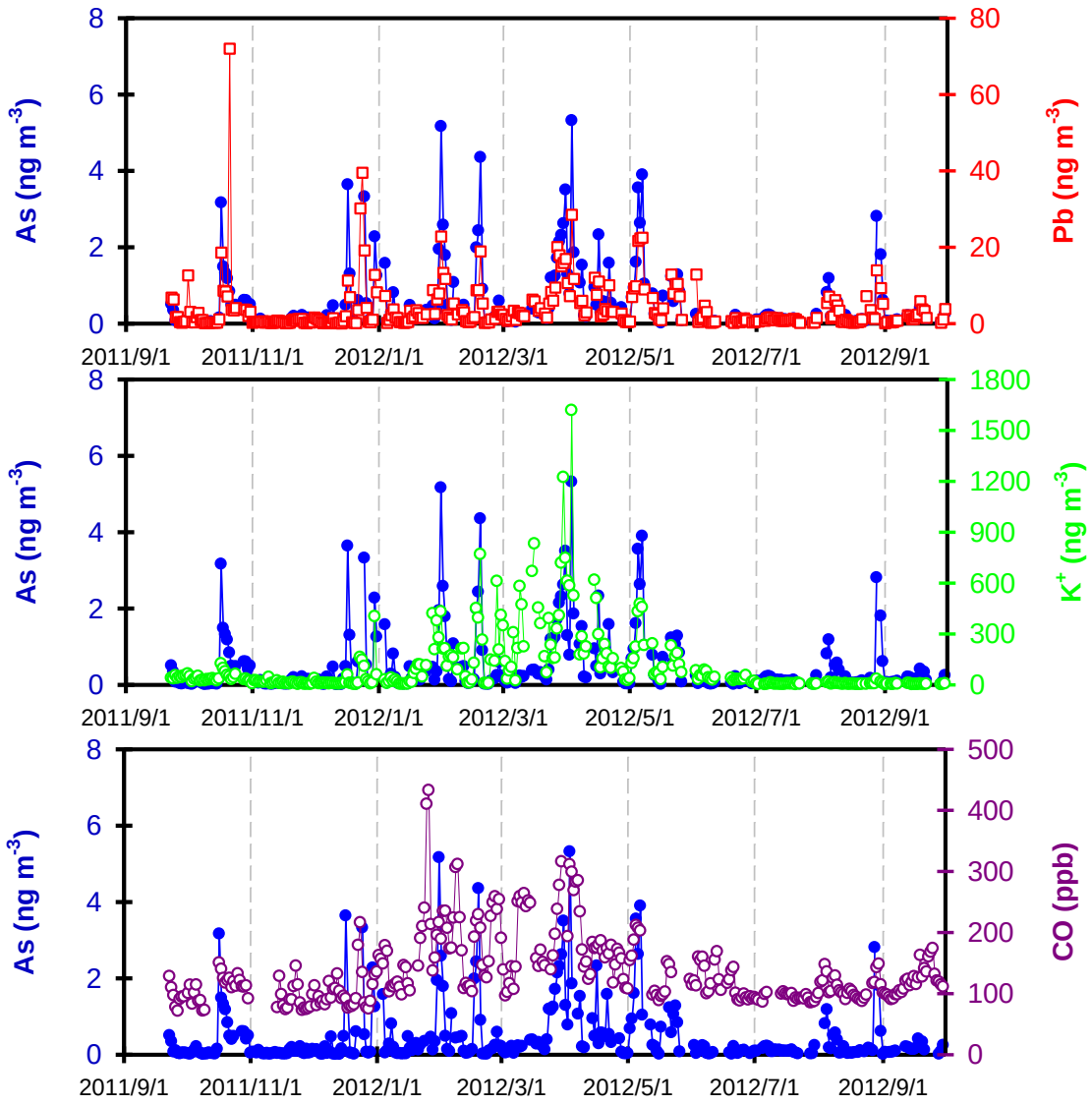

As (ng m-3)
Pb (ng m-3)
K+ (ng m-3)
CO (ppb)
2011/9/1
2011/11/1
2012/1/1
2012/3/1
2012/5/1
2012/7/1
2012/9/1

Figure S1

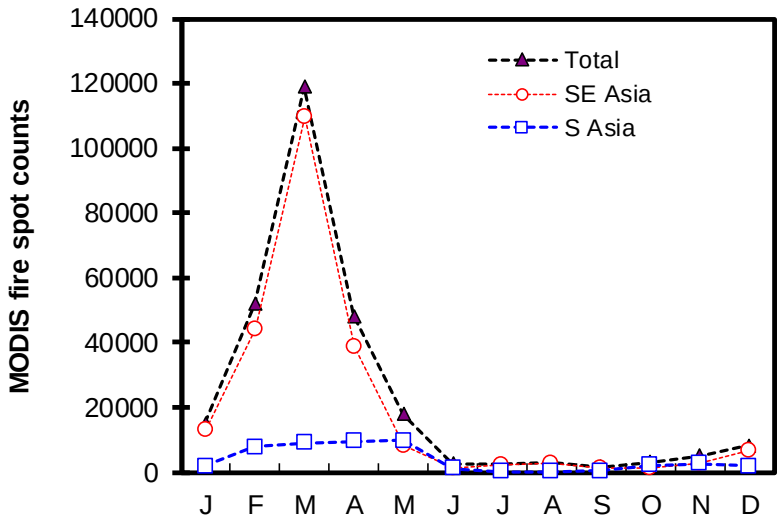
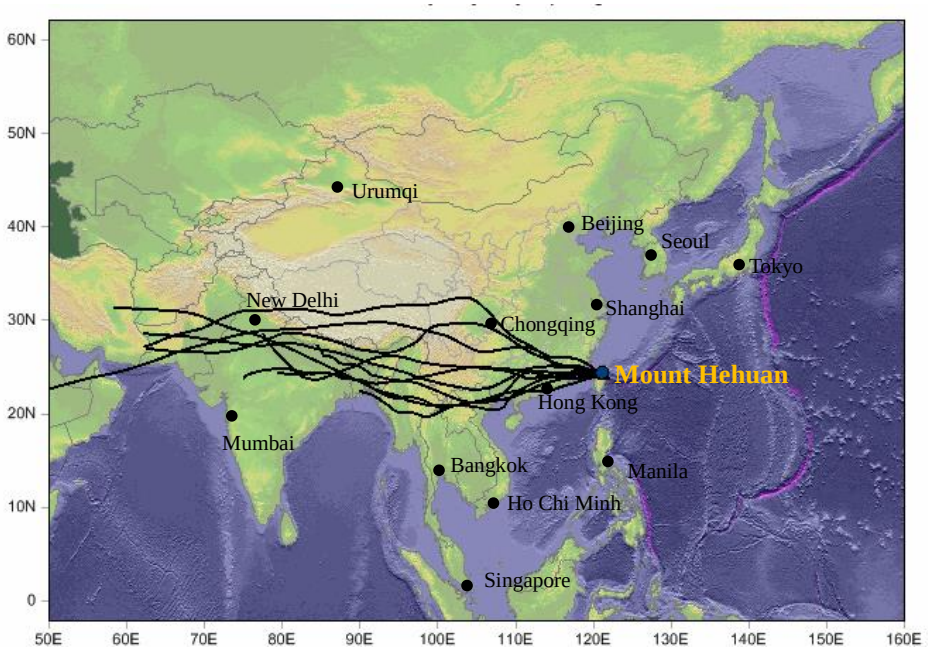

MODIS fire spot counts
140000
120000
100000
80000
60000
40000
20000
0
J F M A M J J A S O N D
Total
SE Asia
S Asia

Figure S2

(a)


60N
50N
40N
30N
20N
10N
0
50E
60E
70E
80E
90E
100E
110E
120E
130E
140E
150E
160E
Urumqi
Beijing
Seoul
Tokyo
New Delhi
Shanghai
Chongqing
Mount Hehuan
Hong Kong
Mumbai
Bangkok
Manila
Ho Chi Minh
Singapore

(b)

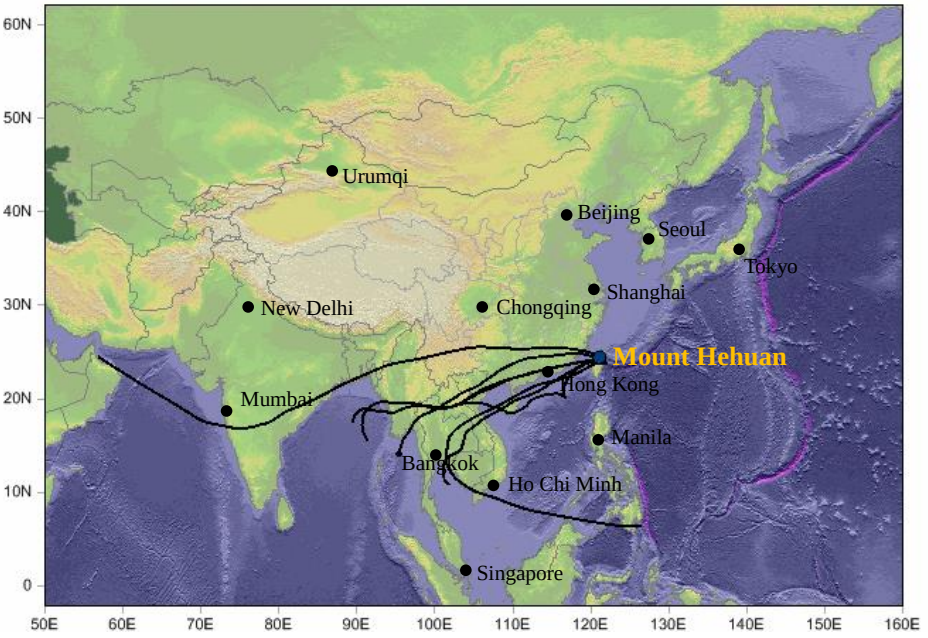

60N
50N
40N
30N
20N
10N
0
50E
60E
70E
80E
90E
100E
110E
120E
130E
140E
150E
160E
Urumqi
Beijing
Seoul
Tokyo
Shanghai
New Delhi
Chongqing
Mount Hehuan
Hong Kong
Mumbai
Manila
Bangkok
Ho Chi Minh
Singapore

Figure S3

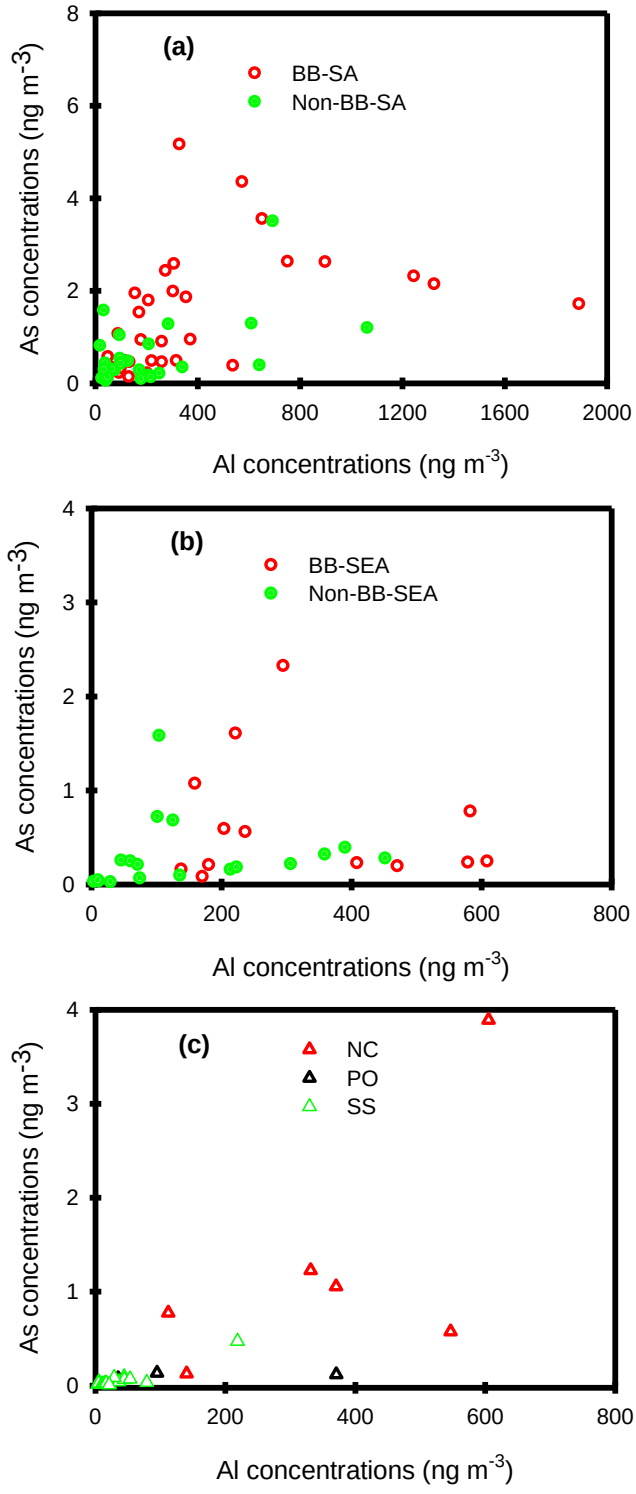

(a)
BB-SA
Non-BB-SA
As concentrations (ng m-3)
Al concentrations (ng m-3)
0
2
4
6
8
0
400
800
1200
1600
2000
(b)
BB-SEA
Non-BB-SEA
As concentrations (ng m-3)
Al concentrations (ng m-3)
0
1
2
3
4
0
200
400
600
800
(c)
NC
PO
SS
As concentrations (ng m-3)
Al concentrations (ng m-3)
0
1
2
3
4
0
200
400
600
800

Figure S4