Supplement of Atmos. Chem. Phys., 18, 13601–13615, 2018
https://doi.org/10.5194/acp-18-13601-2018-supplement

Atmospheric Chemistry and Physics
Open Access
EGU

Supplement of

Impact of low-pressure systems on winter heavy air pollution in the northwest Sichuan Basin, China

Guicai Ning et al.

Correspondence to: Shigong Wang (wangsg@cuit.edu.cn)

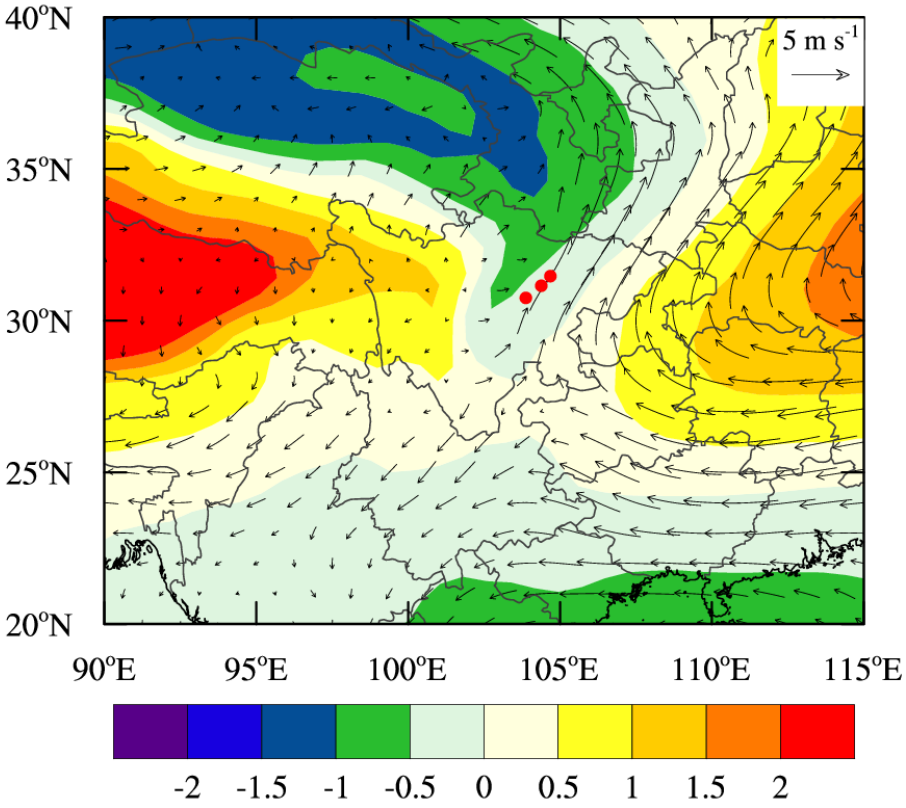

Fig. S1 Composite anomalies of geopotential heights (shading, units: dagpm) and wind vectors (black arrows) at 700 hPa (the averaged wind vectors and geopotential heights at 700 hPa during periods of deteriorating air quality in the eight heavy air pollution events subtracted from their winter mean values from 1 January 2006 to 31 December 2012 and from 1 January 2014 to 28 February 2017). The red dots show the location of the urban agglomeration.

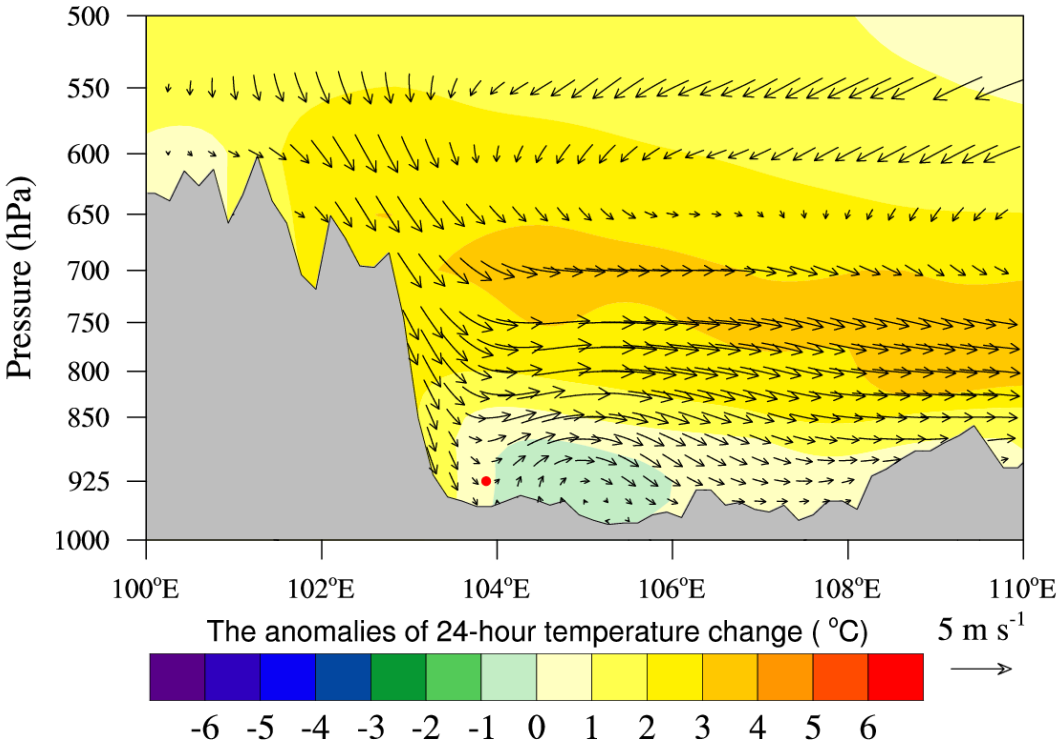

Fig. S2 West-to-east vertical cross-section of composite anomalies of 24-hour temperature change and wind vectors (synthesized by u and w) through the most polluted area (30.75 ° N) (the averaged 24-hour temperature change and wind vectors during periods of deteriorating air quality in the eight heavy air pollution events subtracted from their winter mean values from 1 January 2006 to 31 December 2012 and from 1 January 2014 to 28 February 2017). Note that the vertical velocity is multiplied by 100 when plotting the wind vectors. The most polluted area is marked by red solid dots. The gray shading represents the terrain.

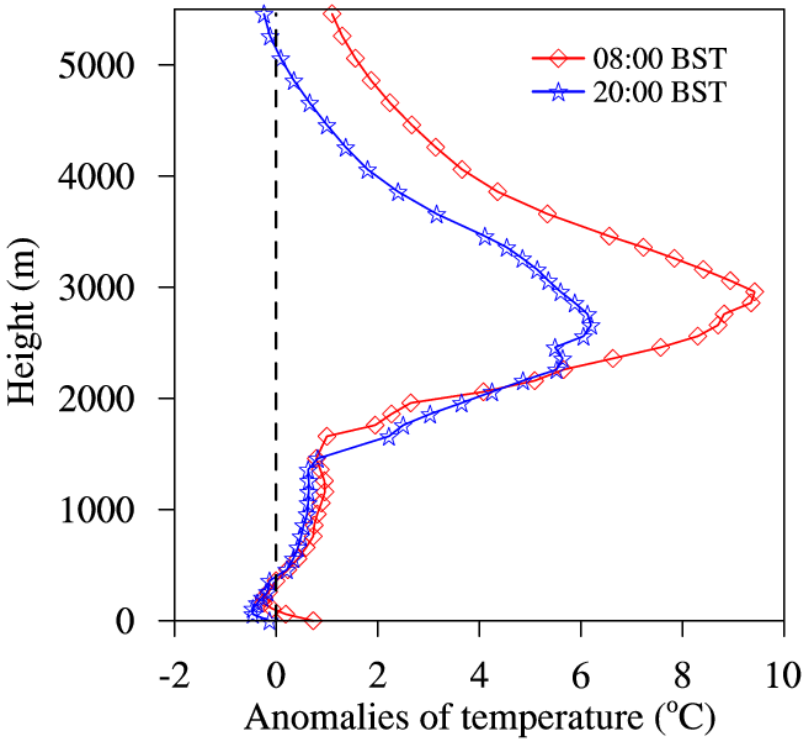

Fig. S3 Vertical profiles of temperature anomalies at Wenjiang station (30.75 °N, 103.875 °E) measured by radiosonde (the averaged temperature during periods of deteriorating air quality in the eight heavy air pollution events subtracted from their winter mean values from 1 January 2006 to 31 December 2012 and from 1 January 2014 to 28 February 2017).

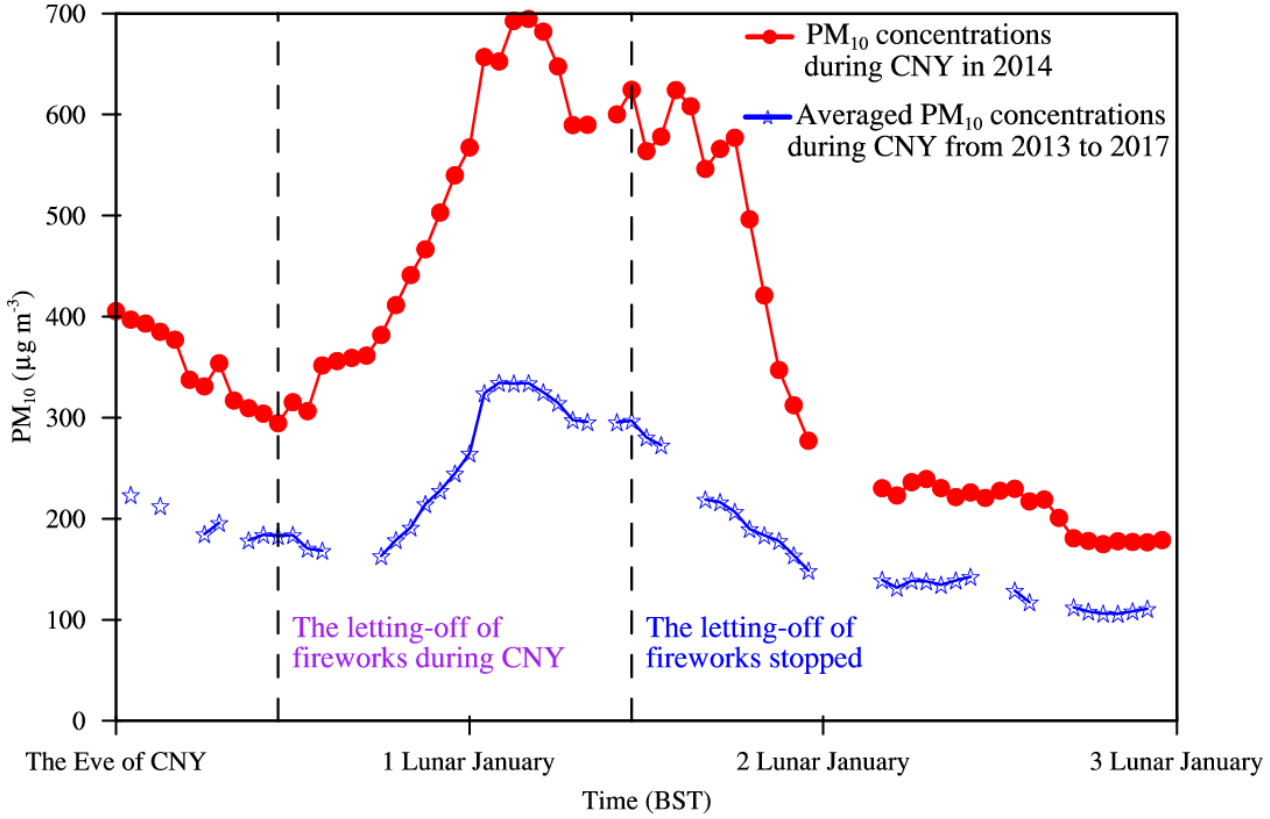

Fig. S4 The hourly concentrations of PM_{10} during Chinese New Year (CNY) in 2014 for event 7 (red solid line) and the averaged PM_{10} concentrations during CNY in five years from 2013 to 2017 (blue solid line). Based on Chinese traditional culture, the period from 12:00 BST on the Eve of CNY to 12:00 BST on 1 Lunar January is defined as the letting-off of fireworks during CNY.

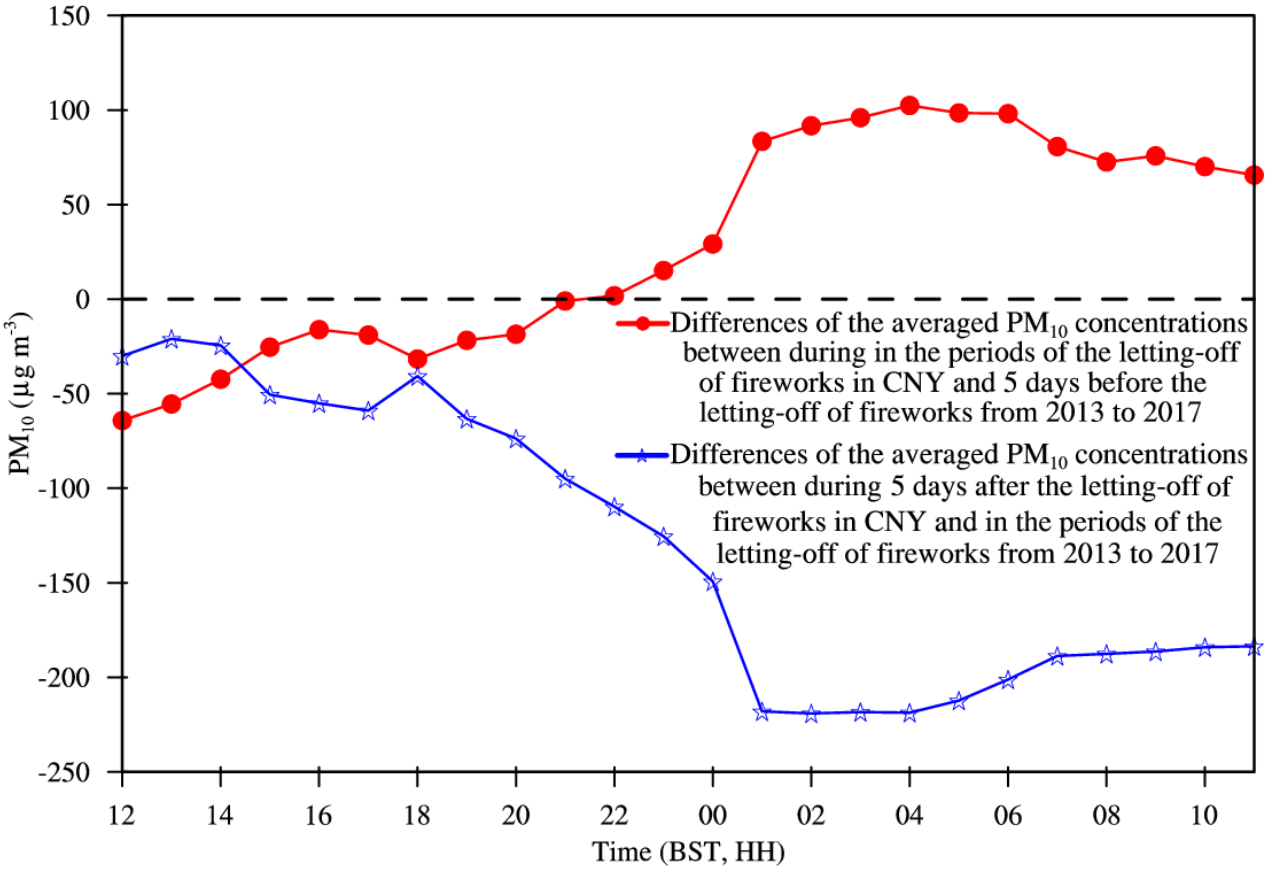

Fig. S5 The diurnal variations of the differences of averaged PM_{10} concentration in Chengdu between during in the periods of the letting-off of fireworks in CNY and 5 days before the letting-off fireworks (red solid line), and between during 5 days after the letting-off of fireworks in CNY and in the periods of the letting-off of fireworks from 2013 to 2017 (blue solid line). The black dashed line represents zero value.