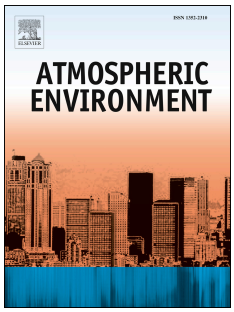
Accepted Manuscript



Dependence of columnar aerosol size distribution, optical properties, and chemical components on regional transport in Beijing

Shuo Wang, Weixiong Zhao, Xuezhe Xu, Bo Fang, Qilei Zhang, Xiaodong Qian, Weijun Zhang, Weidong Chen, Wei Pu, Xin Wang

PII: S1352-2310(17)30606-4

DOI: 10.1016/j.atmosenv.2017.09.016

Reference: AEA 15554

To appear in: *Atmospheric Environment*

Received Date: 13 January 2017

Revised Date: 4 September 2017

Accepted Date: 9 September 2017

Please cite this article as: Wang, S., Zhao, W., Xu, X., Fang, B., Zhang, Q., Qian, X., Zhang, W., Chen, W., Pu, W., Wang, X., Dependence of columnar aerosol size distribution, optical properties, and chemical components on regional transport in Beijing, *Atmospheric Environment* (2017), doi: 10.1016/j.atmosenv.2017.09.016.

Dependence of columnar aerosol size distribution, optical properties, and chemical components on regional transport in Beijing

Shuo Wang[a,b], Weixiong Zhao[a,*], Xuezhe Xu[a,b], Bo Fang[a], Qilei Zhang[a,b], Xiaodong Qian[a,b], Weijun Zhang[a,b,c,*], Weidong Chen[d], Wei Pu[e], Xin Wang[e]

[a] Laboratory of Atmospheric Physico-Chemistry, Anhui Institute of Optics and Fine Mechanics, Chinese Academy of Sciences, Hefei, 230031, Anhui, China

[b] Graduate School, University of Science and Technology of China, Hefei, 230026, Anhui, China

[c] School of Environmental Science and Optoelectronic Technology, University of Science and Technology of China, Hefei, 230026, Anhui, China

[d] Laboratoire de Physicochimie de l'Atmosphère, Université du Littoral Côte d'Opale, 59140 Dunkerque, France

[e] Key Laboratory for Semi-Arid Climate Change of the Ministry of Education, College of Atmospheric Science, Lanzhou University, Lanzhou 730000, China

* Correspondence to :

W. Zhao (wxzhao@aiofm.ac.cn) and W. Zhang (wjzhang@aiofm.ac.cn)

Highlights

1) The combination of the variation of columnar aerosol physical and chemical properties with regional transport process was report for the first time.
2) Seasonal columnar aerosol properties of different clusters were qualitatively and quantitatively retrieved.
3) Concentration of BC showed weakly dependent on long range transport in the autumn and winter, while BrC showed weakly dependent on different clusters during spring and summer.