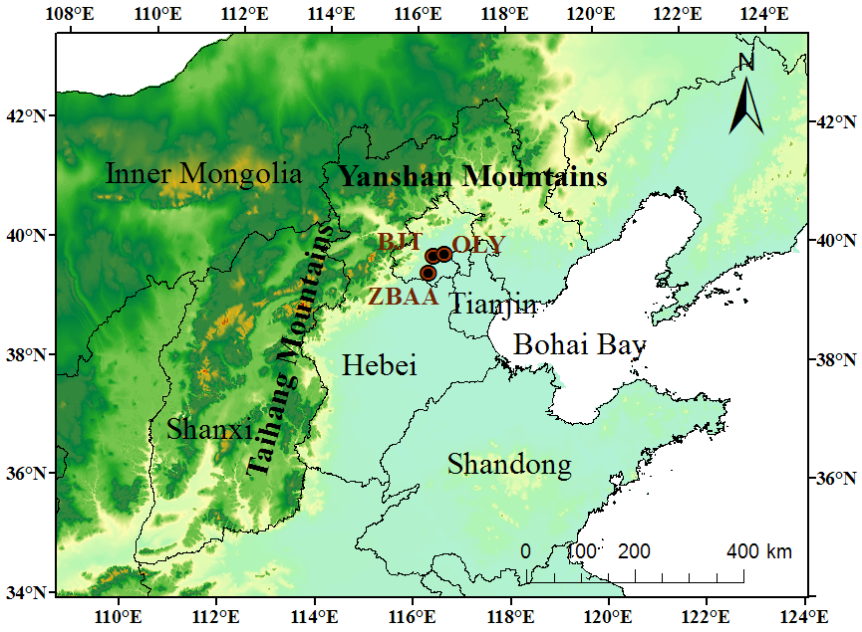
Response to comments by referee 2

We would like to thank you for your comments and helpful suggestions. We revised our manuscript according to these comments and suggestions.

Specific comments:

Question 1: Maps are needed to illustrate not only the locations of Beijing and surrounding provinces that involved in emission control, but also the location of the measurement site in the city of Beijing.

Response 1: Thank you for your suggestion. We illustrate our measurement site and to describe the regions with emission controls.



Observation sites and topography

Besides, we also added some description in the section of introduction to explain the emission controls. Please see the revision as follows.

Consequently, more than 460 businesses with high emissions in Beijing were required to stop or limit their production during 3–12 November, 2014. The number of private vehicles in operation during the same period was reduced by 50% through an odd/even number plate rule. Further, 9298 enterprises were suspended, 3900 enterprises were ordered to limit production, and more than 40,000 construction sites were shut down in all six provinces, cities and autonomous region.

Question 2: Improvement in wording is needed, polishing by a native English speaker is recommended.

Response 2: Thank you for your suggestion. We have polished our manuscript by a native English speaker.

Question 3: It is recommended to elaborate on winter heating policy in China since the central heating in Northern China all stick to the same schedule, which provide a unique opportunity to evaluate the impact of coal-fired heating. Otherwise the readers may be confused why the impact of the heating can be estimated.

Response 3: We really thank you for your suggestion. We have added some descriptions in the section of introduction as follows.

Besides, with the heating supply began to run extensively after 15 November, there was also a slight difference in emissions in the time period before vs. after APEC. Therefore, the implementation of these emission variability methods resulted in significant variations in regional transport and local pollutant contributions. In this study, a lidar ceilometer was used to determine the mixing layer height and the attenuated backscattering coefficient before and after APEC (15 October to 30 November 2014).