

Interactive comment on “Widespread air pollutants of the North China Plain during the Asian summer monsoon season: A case study” by Jiarui Wu et al.

Anonymous Referee #1

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This manuscript presents an investigation of the impacts of trans-boundary transport of air pollutants originated from the North China Plain on regional air quality in the North-east and Northwest China. Contributions of air pollutants from neighboring regions to local air quality become significant especially under prevailing meteorological conditions such as Asian Summer Monsoon seasons (ASM). However, it is quite difficult to assess to what extents the impacts of the trans-boundary transport are and to date few studies are available in the literature, hindering the effective measures from proposing regarding pollution control and prevention. The paper is well written and organized and only a few minor issues need to be resolved before its final publication in the journal. 1. When quantitatively assessing the impacts of the trans-boundary pollutants from NCP

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on the NEC or NWC regions, it is necessary to estimate the uncertainties and include them in the evaluation. In addition, a clear list of all possible sources of uncertainties is needed in the assessment. 2. The validation of separating different contributions (e.g., local, transport etc.) seems to be lack of clear support. Why other processes for example secondary reactions of air pollutants are not included in the method of separation? 3. Why PM10 is not included in quantitative evaluations? Is it because not significant in term of concentration or there are other reasons? 4. A few other rather minor points: 1) L32 on p1, however might be better to be moved to the beginning of the sentence. 2) L52 on p2, pollutants emissions? Emissions of pollutants might be better. There are quite a few on other pages. 3) L73 on p3, tend should be tends. 4) L114 on p4 and other pages, "The further description", here "The" is not needed. 5) L152 on p6, it is "Results and Discussion". 6) L190-191 on p8, the values of 0.69 and 0.62 are not significant different, similar for the values of 0.87 and 0.84. 7) There are a few acronyms (i.e., IOA, MB) that needed to be specified. 8) Why 8:00 and 14:00 are respectively used in Figures 7 and 8? Why not other times? 9) L266 on p11, you cannot use something like "the most remarkable". 10) L288 on p11, in most areas not in the most areas.

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