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Atmospheric Chemistry and Physics Discussions

Interactive comment on "One-year observations of carbonaceous and nitrogenous components and major ions in the aerosols from subtropical Okinawa Island, an outflow region of Asian dusts" *by* B. Kunwar and K. Kawamura

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This is a useful dataset for modeling studies dealing with trans-boundary pollutants transport. In our previous reports it was found that the atmospheric deposition fluxes of carbon, nitrogen and sulfur in Northern China categorized as high levels, and compared to or higher than those documented in Europe, North America, and East Asia (Pan et. al., 2010, 2012 and 2013a). Although we did not measure the impact of atmospheric emissions from China on the surrounding areas, regional transport of toxic

species was recorded periodically (Pan et. al., 2013b). I'd suggest providing more details about the effects of Asia dusts on the chemical composition of particles that collected at this downwind site. To improve the manuscript, a few comments and suggestions that I have regarding the paper are also presented below.

Pg 22063, Ln 5-10: what is the sampling flow? Weekly used here is ambiguous. How long did the sampling last for, 7 days or few days in one week?

Pg 22063, Ln 15: How the field blanks were prepared?

Pg 22063, Sect. 2.2: How many ions were determined in this study? It is better to give the blank values and limit of detection of these species.

Pg 22065, Ln 21-22: This sentence is incomplete.

Pg 22065, Ln 25: Na or Na+?

Pg 22067, Ln 12: Is the aerosol loading weighted by a balance? If yes, at what conditions (T, RH)?

Pg 22068, Ln 11: EC value in winter here (0.37) is inconsistent with that of Table 1.

Pg 22069, Ln25: Please define "WIOM" here.

Page 22070, Ln16: "... the average OC/EC ratios are 4.4 and 5.7, respectively." Such information was mentioned above. It is better to remove either to avoid repetitive materials through the text.

Pg 22070, Ln10: OC/EC ratios in this study ranged from 3.5 to 21. The ratio is higher than 2.0, a value which indicated the contribution of secondary organic aerosols. Does it mean that no primary OC emission was found in the target area?

Pg 22071, Ln 16: "similar to those from Christchurch", here "similar" is hard to follow.

Pg 22073, Ln 12: was MSA− referring to Methane Sulfonic Acid (MSA). If MSA was measured in this study, please include it in the method section.

Pg 22073, Ln 9: MSA peaked in spring. It is NOT likely because the air parcels travelled over the urban region. This explanation is confusing, please clarify.

Pg 22077, Ln 22-25: Formula here is ambiguous, e.g., "[NO3−]+[nss-SO42−]" should be in brackets.

References:

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Pan, Y. P., Wang, Y. S., Tang, G. Q., and Wu, D.: Wet and dry deposition of atmospheric nitrogen at ten sites in Northern China, Atmos. Chem. Phys., 12, 6515-6535, doi:10.5194/acp-12-6515-2012, 2012.

Pan, Y. P., Wang, Y. S., Tang, G. Q., and Wu, D.: Spatial distribution and temporal variations of atmospheric sulfur deposition in Northern China: insights into the potential acidification risks, Atmos. Chem. Phys., 13, 1675-1688, doi:10.5194/acp-13-1675-2013, 2013a.

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