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Interactive comment on “Asian dust storm observed at a rural mountain site in Southern China: chemical evolution and heterogeneous photochemistry” by W. Nie et al.

Anonymous Referee #3

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The specific work is dealing with the Asian dust storm, investigating the obtained picture of the particulate pollution.

I believe that the specific work can be accepted after minor revision.

1. The work is very interesting.
2. Serious grammatical errors do not exist in the text. The most serious changes that they should be made is to write the sentences in the 3rd person and not in the 1st. e.g. line 86: We also present the evidence. . . . It should be made: The evidence. . . .is presented

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3. Some changes which could be made in the text are the following:

Line 19: This paper reports . . . The verb could be replaced by investigates

Line 20: dust storm episode observed

Line 23: Results show that. . .

Line 24: The expression mineral dust underwent (the verb could be changed)

Line 32: Day time- enhanced acid was also verified. (delete the words This study also observed)

Line 49: Delete the expression For example

Line 51: saw nitrate is not an appropriate expression. Please rewrite the specific sentence.

Lines 52-53: The direct uptake. . . was clearly highlighted (or verified or proven) by Sullivan. . . .

Line 56-59: The evolutionary process of dust has been already investigated in northeast Asia. The specific sentence is better to be placed at the beginning of the paragraph.

Line 59: However, to our knowledge,

Line 67: Delete the expression for example

Line 68: while Ndour. . .

Line 74: delete project 973.

Line 76: delete the verb see Figure 1

Line 77: The aim of the specific work is to investigate the impact. . .

Line 79: Special attention is given to the chemical..

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Line 81: the end could be replaced by as well as

Line 82-84: Please rewrite the sentences

Line 86: we also present... please change the sentence using the 3rd person (is presented...)

Line 90: As shown in Fig 1a, 3. Please change the number of Figure 3 into Figure 2 due to their position into the text. Additionally delete the phrase as shown... Put at the end of the specific sentence (Fig.).

Line 100: The present study is focused... Change Fig.2 with Fig.2

Line 104-105: The sentence 'In the following... 'should be deleted.

Lines 105-106: They could be placed at the end of the paragraph

Line 107,115: Please change the begging of the sentences: Trace gases:.. ., Aerosols:

Lines 138-139: Missing data... The specific sentence could be placed at 2.2 paragraph

Line 141: Please replace the verb struck

Lines 143-144: This intense dust storm which has also been...., delete the verb see Fig... as well as the expression figure not shown

Lines 149-151:Due to the significant particle loading...the specific analysis is focused on the second...

Line 152: In order to characterize...

Lines 174-175: Please add a reference

Lines 190: In order to investigate further the evolution...., the atmospheric... Was calculated by the ...2008) and then was related ...

Lines 193: The photochemical.....Fig.5).

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Lines 195: The ratios... are shown in Fig. 6a-6c.

Lines 203-204: Please add a reference

Line 204: We calculate... Please change it

Line 215: In the current study, however,.. Please change it

Line 217: We follow... Please change it

Line 218: The ammonium abundance... (Fig. 6c)

Line 225: some relationship... Please delete it

Line 227: The ratio of the sum..was used to ..

Line 229: In the first two samples...

Line 231: Delete the phrase we interpret this observation...

Line 233: The carbonate was fully... and ammonium,.. (Fig. 6d). This might be the explanation for the specific case.

Line 243: 4-stage evolution... When the Asian dust...

Line 259: High nitrate concentrations...

Line 260-261: Fig. 8.24-26.

Line 263: which was..

Line 264: figure not shown

Line 265: occurred only in the...

Line 266-267: but not the nighttime samples. Please delete it

Line 276: we presume... please change it

Line 278: we can estimate that... please change it

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Line 280: The nitrate concentrations. . . (Fig.8)
Line 283: Increased concentrations
Line 281 (incorrect line numbering): However, considering. . .
Line 285: in the current study. Please delete it
Line 286: In order to determine the key. . .
Line 287: we compare. Please change it
Lines 289-292: please change it
Line 292: Despite the fact that humid. . .
Line 295: Considering. . .
Line 304: To further support. . . the correlation. . . Was also examined
Line 307: we calculated. . . please change it
Line 314: In summary we observed. . . please change it
Line 323: This paper reports. . .
Line 324: was captured
Line 325: underwent
Line 328: The accumulation. . . was verified
Line 332: In this study, we also observed. . .
Line 333: as shown in recent laboratory findings. Please delete it
Line 337: in order to examine further the. . .

Interactive comment on Atmos. Chem. Phys. Discuss., 12, 19135, 2012.

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