1. Line 21-22: It is good to use specific number to show the results.
2. Line 116-119: “For gaseous NOx, O_3 and SO_2, a chemiluminescence…” Each gaseous species has been described in detail later, so it is repeated to show NOx, O_3 and SO_2 here.
3. Line 128: Why use this equation $\rho = d_{va}/d_m$ to calculate mass concentration?
4. Line 133-134: Better to describe RH control system here.
5. Line 164: Pls explain why inject NO_X.
6. Line 165: How to combine experimental gasoline vapor with real case?
7. Line 181: Can not find Fig. S2 and S3.
8. Line 186: Can not find Fig. S4.
9. Line 205: Can not find Fig. S6.
10. Line 204-210: ammonium aerosols should be discussed in 3.3.
11. Line 213: Delete #
12. Line 212-213: There were many studies indicated the relationship between SO_2 and secondary aerosol. What is the highlight of your experiment?
13. Line 215: Pls revise "were enhanced by one order of magnitude" to “enhanced by XXX to one order of magnitude”.
14. Line 240: “This phenomenon” means “the H+ concentration was increased” and
15. Line 247-251: Why use large gap between SO_4^2 and SO_2 rather than S-bearing organic fragments (CxHyOzS) to show the reason for existing of organic sulfur?
16. Line 282: Too many “This phenomenon indicated”.
17. Line 286: Too many “This result indicated that”.
18. Line 402-403: Repeated conclusion.
19. Line 422-423: Repeated conclusion.
20. Line 410-412: SA formation still be a small part from vehicular evaporation emissions. What is the meaning of your study?