

We would like to thank the anonymous reviewer for the comments that significantly improved the clarity and readability of the manuscript. Our point-by-point responses are found below in blue ink. The revised content is highlighted in yellow.

This study is of value in that it provides PM_{2.5} species measurements in Taiwan and assessed the emission control effects. However, the paper is not presented in a professional way. Many places are using non-scientific expressions in the field of atmospheric chemistry. Therefore, the whole paper needs to be substantially improved before it can be published on ACP. The problematic wording includes but not limited to –

1. Abstract line 1: “when particulate matter (PM_{2.5}) levels ...” should be “when fine particulate matter (PM_{2.5}) levels ...”
2. Line 13 please revise “In contrast, local NO_x ...”
3. Line 35, it is misleading to say “such as sulfate, nitrate, and ammonium” after “gas-phase precursors”.
4. 2.3.1 section title: “sulfate sources” sounds better than “sulfate contribution”.
5. 3.2 section title “sulfate formation pathways”.

A: Thanks for the reviewer’s comment. We have reviewed the content to correct the wording and present it in a more professional way. Some examples are provided as follows:

Abstract line 1: “when fine particulate matter (PM_{2.5}) levels ...”

Lines 13-14: “In contrast, nitrate and ammonium are predominantly influenced by local NO_x and NH₃ emissions. Reducing SO₂ emissions decreases sulfate levels, which in turn affects NH₃ partitioning and results in lower ammonium concentrations.”

Lines 34-36: “PM can enter the atmosphere through direct emissions of primary aerosols, such as black carbon, sea salt, dust, and certain organic substances. Alternatively, PM can be formed via chemical reactions of gas-phase precursors, creating secondary aerosols such as sulfate (SO₄²⁻), nitrate (NO₃⁻), and ammonium (NH₄⁺) (Seinfeld et al., 2006).”

2.3.1 section title: “Sulfate sources”.

3.2 section title: “Sulfate formation pathways”.

Lines 21-23: “Nevertheless, the costs of emission reduction vary due to differences in methodology and regional emission sources.”

Lines 98-99: “Additionally, intensive observation data using filter sampling were obtained from Shalu...”

Lines 208-210: “To assess regional distribution, we used area average concentration and partitioning of PM_{2.5}, based on TW-MOENV's pollutant zone classification (Fig. S3b),

focusing on areas with elevation less than 200 m above sea level (a.s.l.) to avoid complexities in terrain”

Lines 221-222: “The correlation coefficients of PM_{2.5} between observation and model at Shalu and CSMU are 0.76 and 0.65, respectively, demonstrating consistency of model results for concentration and change trend at these two stations (Fig. S5).”

Line 345: “This suggests a strong correlation between SO₂ and acidity, likely due to a common influencing factor, NH₃.”