

# Point-by-point responses to the comments & suggestions from the editor

**Journal: Geoscientific Model Development**

**Manuscript ID: EGUSPHERE-2023-1531**

**Title: “Diagnosing drivers of PM<sub>2.5</sub> simulation biases in China from meteorology, chemical composition, and emission sources using an efficient machine learning method”**

## **Comments from the editor:**

Please revise the manuscript and finalize it, as suggested by the reviewers.

- We appreciate the editor’s efforts on this manuscript. In the revision, we carefully revised the manuscript, double-checked the expression and grammar, and made detailed responses. We hope to meet the requirements of the journal. Please contact us if there are any problems.

L31. “particulate matters”

**Change to: “particulate matter”**

L53-54. “Moreover, due to the strong influence of emissions, it is instructive to diagnose CTMs biases of PM<sub>2.5</sub> based on a source-appointment perspective.”

**Change to: “Moreover, given the significant impact of emissions, it is instructive to diagnose CTMs biases of PM<sub>2.5</sub> based on a source-appointment perspective.”**

L60-61. “This study focused on 2019 because of the large number of observations, the reliability of the emission inventories, and without interference of COVID19.”

**Change to: “This study specifically targets the year of 2019 due to the extensive availability of observational data, the reliability of emission inventories, and the absence of COVID-19-related disruptions.”**

L65-66. “A total of about 350,000 observations meeting quality control criteria were selected from all time series data points across multiple monitoring stations.”

**Change to:** “Approximately 350,000 observations, which met the quality control criteria, were selected from the entire time series data points collected from various monitoring stations.”

L126-128. “Seven sectoral sources (industry, energy, residential, transportation, agriculture, open burning, and biogenic emission) were used to quantify the contribution to the simulation bias.”

**Change to:** “The contributions to the simulation bias were quantified using seven sectoral sources: industry, energy, residential, transportation, agriculture, open burning, and biogenic emissions.”