

Review result of “Urban-rural patterns and driving factors of particulate matter pollution decrease in eastern china” (egosphere-2025-2194)

Response to Editor:

editor's comments are given in blue,  
our responses are given in deep red.

**Some of the content in the manuscript have been revised and updated.**

We would like to thank the editor for carefully reading the manuscript and providing detailed and constructive comments, which have helped a lot in improving the manuscript. We quote each comment below, followed by our response.

Please notice that the journal now have author guidelines for Title, Abstract, and Conclusions ([https://www.atmospheric-chemistry-and-physics.net/policies/guidelines\\_for\\_authors.html](https://www.atmospheric-chemistry-and-physics.net/policies/guidelines_for_authors.html)). I found the following is missing "The topic of the article and why it is important" in the abstract. Please follow the guidelines to make justifications.

Thank you very much for your valuable suggestions. When we previously drafted the abstract of this manuscript, we did not clearly articulate the section on 'The topic of the article and why it is important'. This study's primary objective is to integrate an interpretable artificial intelligence framework with multi-source data (satellite, meteorological and auxiliary data) to derive particulate matter concentrations in eastern China over the past several years, assessing trends in urban and rural areas. Interpretable variables are then used to analyses the model and identify the key variables influencing pollutant variation. This research is crucial for evaluating the effectiveness of environmental policies and ensuring equitable health co-benefits. Based on the above, we have revised the opening section of the abstract to include the part about 'The topic of the article and why it is important'. The specific content is as follows: 'Understanding the urban-rural patterns and driving drivers behind the recent decrease in particulate matter (PM) pollution across eastern China is essential for assessing the efficacy of environmental policies and ensuring equitable health co-benefits. By employing an interpretable, end-to-end machine learning framework integrating satellite observations, meteorological factors, and auxiliary datasets, this study reveals changes in urban and rural PM pollution and the underlying drivers.]', and the corresponding modifications have been made in the manuscript.