Dear Editor:

Thank you for your letter and the reviewers' comments on our manuscript titled "Analysis of the Spatiotemporal Evolution, Key Control Features, and Driving Mechanisms of Carbon Emission/Absorption in the Continental Ecosystem of Shandong Province from 2001 to 2020" (manuscript number: ijgi-3687862). All comments are highly valuable and have been instrumental in helping us revise and improve the paper. We have carefully reviewed these comments and made the corresponding revisions in the original text, highlighting them in red. We hope you will find these revisions satisfactory.

Comments 1: I can see the data lacks of in-situ observations, therefore, the uncertainty should be discussed in the Discussion section. Further, the sensitivity assessment can be implemented.

Response 1:Thank you for your valuable feedback on our paper. We fully recognize the uncertainties that may arise from the lack of field observation data, and have accordingly revised the discussion section to specifically address the uncertainties associated with the absence of field data (lines 483–486). We agree that sensitivity analysis is crucial for assessing the robustness of research findings, and since this aspect was not addressed in our study, we have discussed this shortcoming in the discussion section (lines 485–489).

We hope these revisions effectively address your comments and enhance the quality of the paper.

Comments 2: The entropy theory can be further explained for better understanding.

Response 2: Thank you for your valuable comments on our paper. We have provided a more detailed explanation of entropy theory in the Methods section of our paper. We believe that this expanded explanation will help readers better understand the theoretical basis and clarify its role in our research (lines 172–191, 218–226).

Once again, thank you for your careful review and valuable suggestions. We believe that these revisions will improve the quality of our paper and look forward to your further comments.

We would like to express our sincere gratitude for your valuable comments.

We have made every effort to improve the manuscript and have made the necessary revisions. These revisions do not affect the conclusions or framework of the paper. We appreciate the helpful suggestions and comments from the editors and reviewers and hope that our revisions will be accepted.

Once again, thank you for your comments and suggestions.