

Dear Reviewer,

We sincerely thank Reviewer #2 for the comments and suggestions. We have modified the manuscript accordingly. In the following, we will reply them one by one.

1. It would be useful to the reader to compare the XML configurations, the recursive timers used by CIOFC1.0 with other major climate models (are they compatible? any existing issues in other models that were fixed by the framework?)

**Response:** Sincerely, no major climate models has used CIOFC1.0 for improvement in data input/output. We find that, advantages of CIOFC1.0 may be not attractive enough to major climate models that already have codes for data input/output and many users, while the advantages would be more attractive to newly developed models. CIOFC1.0 has been used by a new model (i.e., MCV), which was discussed and summarized in Section 5.

2. "supports three kinds of vertical coordinates: Z, SIGMA, and HYBRID coordinates" (p5, l25) - missing references for the different kinds of coordinates?

**Response:** We've added the references in the text. Please refer to Section 3.1.1.2 (P5L25) of the revised manuscript.

3. Authors might want to rephrase "Parallelization by CIOFC1.0 can accelerate ..." (p1, l20) to "The CIOFC1.0 framework can accelerate... by parallelizing..." (specifying what was parallelized)

**Response:** We've rephrased the expression accordingly. Please refer to the Abstract (P1L20~P1L21) of the revised manuscript.

4. "This paper focus on C-Coupler..." (p2, l7) to "This paper focuses on C-Coupler..."

**Response:** We've modified the expression accordingly. Please refer to Section 1 (P2L7) of the revised manuscript.

5. "As models are under the development of finer grid resolutions, ..." (p2, 19) to "As models are using finer grid resolutions..."

**Response:** We've rephrased the expression accordingly. Please refer to Section 1 (P2L10) of the revised manuscript.

6. "instead use sequential I/O for high-resolution integration..." (p2, l21) to "instead use sequential I/O for high-resolution model output"

**Response:** We've rephrased the expression accordingly. Please refer to Section 1 (P2L22~P2L23) of the revised manuscript.

7. "the atmospheric model of FV3 (Finite Volume Cubed Sphere Finite Volume Cubed Sphere) ..." (p3, l16) to "the atmospheric model of FV3 (Finite Volume Cubed Sphere) ..."

**Response:** We've rephrased the expression accordingly. Please refer to Section 2 (P3L16~P3L17) of the revised manuscript.

8. "combing data interpolation and field input/output..." (p4, l25) to "combining data interpolation and field input/output..."

**Response:** We've rephrased the expression accordingly. Please refer to Section 3.1.1 (P4L25) of the revised manuscript.

9. "A technical question for such a question is how to specify file grids..." (p4, l25) to "A challenge ..."

**Response:** We've rephrased the expression accordingly. Please refer to Section 3.1.1 (P5L1) of the revised manuscript.

10. "We also make the I/O configuration manager provide XML configurations..." (p5, l3) to "We also implemented the I/O configuration manager to output XML configurations..."

**Response:** We've rephrased the expression accordingly. Please refer to Section 3.1.1 (P5L3~P5L4) of the revised manuscript.

11. "3.3 Implementation of the parallel I/O operation " (p8) to "3.3 Implementation of parallel I/O"

**Response:** We've rephrased the expression accordingly. Please refer to Section 3.3 (P8L24) of the revised manuscript.

12. "A fine resolution () and a coarse resolution () were used. " (p20 l15) to "A fine resolution () and a coarse resolution () fields were used for testing..."

**Response:** We've rephrased the expression accordingly. Please refer to Section 4.3 (P20L15~P20L17) of the revised manuscript.

13. "We first evaluated the performance of data output. " (p20, l23) to "We first evaluated the [framework output | model write | model output] performance..."

**Response:** We've rephrased the expression accordingly. Please refer to Section 4.3 (P20L23) of the revised manuscript.

14. "This is because the output of multiple fields can share the same file creation and..." (p20, l26) to "This is because multiple fields can be written out to the same file, sharing the file creation time,..."

**Response:** We've rephrased the expression accordingly. Please refer to Section 4.3 (P20L26~P20L27) of the revised manuscript.

15. "especially when the number of I/O processes is big..." (p21, l4) to "especially for large number of I/O processes..."

**Response:** We've rephrased the expression accordingly. Please refer to Section 4.3 (P21L3) of the revised manuscript.

16. "could be achieved " (p21) to "was achieved"

**Response:** We've rephrased the expression accordingly. Please refer to Section 4.3 (P21L8, P21L10, P2115, P21L17).

Additional modifications:

17. We added the grant no. of two research projects in the *Acknowledgements* part. These two projects essentially supported this research work. We are sorry that we forgot to acknowledged them in the previous versions of this manuscript.