

Response to Anonymous Referee RC 1

I thank the referee for the careful reading and the useful comments and will adapt the manuscript accordingly. Below is a point by point reply with the referee's comments in bold font, my reply in italic font and the changes in manuscript in normal font.

1. Comment of the referee:

Page 2, line 3: I do not think that Lovejoy and Schertzer really believe that peaks in spectra are irrelevant. The diurnal and annual cycles are definitely of importance. I think they want to emphasize that the background spectrum is also important.

Author's reply:

Agreed.

Changes in text:

Paragraph will be adapted to more accurately describe the Lovejoy and Schertzer view.

2. Comment of the referee:

Page 2, lines 24-26: I understand the first part of the sentence but not the second part. This sentence should be rewritten.

Author's reply:

This is the motivation for continuation methods which was probably too much compactly formulated.

Changes in text:

Sentences will be split to clarify the main point.

3. Comment of the referee:

Page 4, line 9: Also Ito noise can represent unresolved processes. The point of using Stratonovich noise is that those unresolved processes are serially correlated; whereas Ito noise would assume that the noise is serially uncorrelated.

Author's reply:

Agreed.

Changes in text:

This aspect will be mentioned in the revised text.

4. Comment of the referee:

A brief explanation what x and X stand for would and whether there is any real difference be helpful.

Author's reply:

Agreed.

Changes in text:

The interpretation of both symbols will be better described.

5. Comment of the referee:

AMOC, MIS, etc should be defined at first usage.

Author's reply:

Agreed.

Changes in text:

The introduction and explanation of the acronyms will be checked and corrected.

6. Comment of the referee:

Page 8, line 14: “two type” -> “two types”

Author's reply:

Agreed.

Changes in text:

Will be corrected.

7. Comment of the referee:

Page 9, line 17: “also a CAM” -> “also to a CAM”

Author's reply:

Agreed.

Changes in text:

Will be corrected.