

## Rebuttal

1. The mascons are estimated as 3-degree spherical caps, where 3-degree indicates the radius of the spherical cap. The 3 degree spherical cap mascon estimates are then represented on a 0.5 degree x 0.5 degree grid. Please correct the text in the manuscript accordingly.

Ans. Modification made in the manuscript at line 120. Thanks for the suggestion.

2. The supplementary material requires a proper motivation and an objective. Currently, the authors show that the involved datasets lack consistency between them in terms of amplitude. However, they point out that the phase of the datasets match each other, and therefore, they argue that it is not required to bring the datasets to a consistent resolution, which can alleviate the issue. While the argumentation can be accepted, it still requires to clarify whether the result depicted in the supplementary material is not a chance occurrence. I suggest the authors to add similar plots for a few more locations, maybe for different climatic zones, to see if the phase coherence between the datasets is consistent globally. Furthermore, I urge the authors to clearly specify their goal for the supplementary material.

Ans. Thanks for the advice. The supplementary material is modified by adding a small introduction and additional locations to demonstrate the global consistency of the method.