

Interactive comment on “On the Effect of Model Parameters on Forecast Objects” by Caren Marzban et al.

Caren Marzban et al.

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Dear Reviewer 1

Thank you for your prompt review. Below, please find your original review followed by our responses.

> It has been mentioned that the paper introduces a novel framework. However, it seems that the current authors have used existing methodologies of clustering/statistical analysis that have already been applied to similar problems. Clustering of object fields is a well researched area of study. Therefore, it is not clear how this work adds to the literature.

It is true that all of the components of the proposed methodology are well-established

C1

(to varying degrees); but to our knowledge an object-based sensitivity analysis method has not been developed previously, and certainly not with the specific methods employed by us. More specifically, methods such as 1) clustering, 2) regression models, and 3) sampling methods from experimental design, have not been used together to perform sensitivity analysis of objects in a forecast/spatial field with respect to model parameters. Perhaps it is more accurate to describe our work as a general approach, employing existing methods, for addressing the question of how model parameters affect objects in a forecast field. Again, to our knowledge, no such framework exists, and in that sense the proposed approach is novel.

> Also, the paper does not provide any specific guidelines on the choice of algorithms and leaves the reader with an ambiguous mind.

Our initial intention was to develop a broad framework that can be utilized in a wide range of applications. But it is possible that we have gone too far. As such, we will be happy to add another section in which we provide the reader with some general (but more specific) guidance.

> With these changes, the paper may become a good guidance paper for sensitivity studies.

Thank you.

> Specific comments:

> 1. Please elaborate the abstract to cover some key contributions of the paper or a summary of results in 1-2 sentences. It is incomplete to get the idea of the paper in the current form.

Agreed. We will do so.

> 2. At the end of introduction, add more details of the work done in this paper. Also, add an outline of the various sections that follow.

C2

Agreed. We will do so.

> 3. If the goal of the paper is to introduce a novel framework, a flowchart of steps involved in the methods section would be useful.

Another excellent idea. We will do so.

Thank you, Authors

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