Dear Editorial Team, Dr Chen,  
  
Thank you for your review of "Exploring Local Explanations of Nonlinear Models Using Animated Linear Projections", submitted to Computational Statistics.

We have revisited the manuscript and to address the reviewer’s comments:

Changes to the manuscript are discussed inline in blue.

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COMMENTS FOR THE AUTHOR:  
  
The authors should update their references using the Computational Statistics citation style.  
*We found that the supplied documentclass sn-chicago to better fit expectations over the default sn-mathphys.*  
  
Reviewer #1: This paper proposes an interactive visualization tool and its implementation as an R package to intuitively understand LVA in non-linear models.  
  
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General Comments  
  
You have not clearly stated the usefulness of the radial tour; please explain the advantage of using the SHAP values of PI and CI as the contribution of 1D projection compared to drawing a static density plot or scatterplot. Is it possible to correctly evaluate the sensitivity of variables by 1d projection for nonlinear models? Also, in the Case Studies in Section 5, please provide an explanation in relation to the Radial tour operation.

*We have discussed and cited the radial tours in section 3, and their application at the end of section 4.2. We have made edits to both sections to draw attention to the rational for their use in this analysis.*

*SEE circa ~line448 Insert a new paragraph motivating the selection of the radial tour.*

*\hypertarget{radial-tour}{%*

*\subsection{Radial Tour}\label{radial-tour}}*

*Once a PI ad CI have been identified in the global view the proposed*

*analysis is to explore the LVA of the PI. To do we will treat the LVA as*

*a basis for linear projection visualized against the prediction values.*

*Then the radial tour can be used to explore the sensitivity of variables*

*to the predictions. The allows an analyst to see and evaluate the*

*explanation of the LVA which can be used to inform model selection or*

*specification see section ref\{sec:casestudies).*

*##NEED to ensure that \ref{sec:} is working here and in one other case.*

The results are very different between the examples provided in the shiny application in the R cheem package and the examples presented in the paper. Please make sure to use random number seeds to achieve similar results. In particular, in the Case Studies of classification, there is no misclassification in the examples in the cheem package, and the misclassification is not indicated by the red circle as shown in the paper.

We are reviewing the cheem model objects for correctness as all seem to be claiming R^2=1.

The panel that is treeshap in the global view in the paper is attribution in the cheem package. Please unify either one.

We are reviewing and unifying the verbiage for panels and axes.  
  
In the global view in the paper, the model panel has jitter processing, but the cheem package does not.

We are reviewing and unifying the verbiage for panels and axes. The updated version will remove the jitter.

Discussion is just a Conclusion. For example, please supplement any discussion on the following.  
- Abstract and Introduction are described in the context of XAI, but the tools proposed in this paper are not likely to be able to handle large data sets.  
- Concerning the convenience of the package: the application by the cheem package outputs little information (e.g., axis information), which makes it difficult to use intuitively.

We are reviewing the axis labels, to see if they can be clarified. This has been a pain from the start I have tried a bunch of solutions previously, but ended up keeping a simplified version. I will see if I can specify in the title of the faceted panels.  
  
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Individual Comments  
  
(p.7 l.18) Figures 3b, 4a -> 3c, 4b?

*You are correct, this has been fixed.*  
  
(p.8 l.7) Is the SHAP value of the CI taken into account in the radial tour?

*In the Radial tour section we have made this more explicit that the CI doesn’t impact the bases, but is highlighted for comparison.*  
  
(p.8 l.8) "The PI is ... global view" : The shiny app in the cheem package does not support interactive selection by clicking in the global view. (cheem version 0.3.0 on Windows 11 / Google Chrome)

*We have clarified the text from selection of the PI to click and drag highlighting discussed above and below this point. We have confirmed that plotly interaction is listed as an import. And validated the interaction (cheem version 0.3.0 on Windows 10 / Google Chrome).*   
  
(p.10 Fig4) Residual plot is not displayed in cheem version 0.3.0 on Windows 11 / Google Chrome.

*We have confirmed that residual plots do display for regression models, while classification models give more of a visual confusion matrix display. (cheem version 0.3.0 on Windows 10 / Google Chrome).*  
  
(p.11 l.5) Figure 3a & b -> 4a & b?

*We have corrected the manuscript, thank you*.  
  
(p.11 l.7) Figure 3d -> 4d?

*We have corrected the manuscript, thank you*.  
  
(p.21 l.10) <https://nspyrison.github.io/cheem/> is not available.

*SPINIFEX is up but CHEEM is down, Need to look into Packagedown*

(references) There are some characters like "???".  
  
*There is nothing in the bib file to indicate when these appear. This has been confirmed to be fixed when switching to the documentclass sn-chicago.*  
  
Reviewer #2: This is a very interesting paper.  
I was able to run your software using publicly available packages.  
Unfortunately, I could not play videos shown at the following URLs.  
<https://vimeo.com/666431172>  
<https://vimeo.com/666431143>  
<https://vimeo.com/666431148>  
<https://vimeo.com/666431163>  
<https://vimeo.com/666431134>  
It would be even easier to understand if videos could be played back, so I hope this will be possible.

*We have validated that these url’s are pointing to the correct content, videos are set to public and content is marked for all audiences. Vimeo did take a minute to load, especially upon first visit.*  
  
I think the visualization you propose is very clear.  
However, I have the impression that it is difficult to understand, so I expect detailed explanations.  
For example, detailed explanations of Figure 3 e and Figure 4 e would be helpful.  
I also think that explanations of the data in Figure 3 and Figure 4 would make it even easier to understand.

*The purpose of this section is to familiarize the layout. Use cases and their interpretations are discussed in the preceding sections.* We have clarifed this point in the text  
  
For small details, I think it is necessary to check page 5, line 38 and page 11, line 29.

*Page 5, line 38, discusses the LVA packages. These packages have been validated to be available on CRAN. treeshap has been updated to reflect it’s availability on CRAN. Text and references have also been updated for accuracy version number at time of clarification 10/24/2023.*

*page 11, line 29 discusses the hyperparameter values used in the random forest models. This sentence has been parsed into two for readability, regression and classification respectively. The values have been validated to still be accurate to the examples used.*