Reply on CC3
James P. Kossin et al.

Author comment on "Technical Note: Quantifying Hazard Probability and Risk from Ensemble Projections of Downscaled Climate Variables" by James P. Kossin et al., EGUsphere, https://doi.org/10.5194/egusphere-2022-9-AC3, 2022

I'll consider the comments on the manuscript to be addressed at this point. But I would like to continue the dialog a bit along a parallel thread.

The way I see it, there are two disparate issues that we're discussing here. The first is a matter of mathematical formalism, i.e., the difference between the formal definitions of probability and likelihood. I agree that it's important to be correct, but I also think that this distinction will be lost on the majority of readers. The second issue I see as far more critical and far-reaching. This is the issue of implying more confidence in the projections than are supported. For example, the kind of IPCC statement that you're describing:

"to keep the temperature increase under 1.5 degrees C with a 67 percent probability the world needs to .............."

would probably not be interpreted much differently if we stated

"to keep the temperature increase under 1.5 degrees C with a 67 percent likelihood the world needs to .............."

In this respect, I think that you may be placing too much emphasis on the wording at the expense of addressing the root issue. Here I would argue that the more liberal use of the grammatical qualifier "modeled" would address the issue more effectively than the use of likelihood in place of probability.

In our manuscript, in response to your comments, we have done both. That is, we replaced probability with likelihood to be more mathematically correct, but more importantly, we have included the qualifier "modeled" throughout the text. We have also added a new closing paragraph in the summary/discussion section that emphasizes interpreting our results with full knowledge of the limitations.