

The revised manuscript has been substantially improved, and I would like to thank the authors for carefully addressing my previous comments. The revision more convincingly justifies the effectiveness of the fine-tuned models by examining saliency maps in greater detail and assessing their physical consistency, rather than relying solely on predictive performance metrics and aggregated saliency. The added figures and associated physical interpretations greatly strengthen the manuscript. In particular, Figures 12 and 13 provide more convincing evidence that the saliency-map patterns are physically meaningful and that the pre-trained models retain robust and transferable relationships after fine-tuning. Figure 9 helps demonstrate that fine-tuning maintains station-scale performance for precipitation extremes.

As the authors note in their response, these analyses “approach the practical limits of current XAI techniques: saliency-based methods quantify input sensitivity but do not provide causal explanations.” I therefore believe that examining saliency maps for specific cases, and assessing their alignment with the conceptual model of the relevant local weather processes, is a necessary and valuable step toward improving the explainability of AI-based downscaling models. The revised manuscript demonstrates this approach well and provides stronger support for the robustness of the pre-trained models in transferring learned relationships from a gridded dataset to station-based datasets.

My only remaining suggestion is that the authors add a brief discussion in the Introduction, perhaps around Line 77, on the importance of physical alignment between saliency patterns and the synoptic factors controlling local extreme weather. This would further highlight the authors’ effort to push saliency-based XAI beyond purely diagnostic sensitivity analysis and toward physically interpretable evaluation of learned relationships. It would also help clarify why the added case-wise and physically grounded saliency analyses are critical to the manuscript’s contribution.

Overall, the revised manuscript addresses my initial concerns, and I am happy to recommend it for publication after this final minor revision is considered.